LIBRARY
RECEIVED
LIBRARY
BUREAU OF CHEMS
RECEIVED
SEP 3 1922
U.S. Department of Agriculture

MEMBER OF THE A. B. C.

FIFTY-FIRST YEAR

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXV. No. 9 NEW YORK AND CHICAGO, AUGUST 31, 1922 { Per annum. $4.00 / Single Copy, 10 Cents

SCANDINAVIAN-AMERICAN
TRADING COMPANY
50 EAST 42 ST., NEW YORK CITY

Kraft Pulp

We can make you an attractive proposition on kraft for shipment over the balance of the year. Let us quote.

—also some spot kraft on dock for immediate shipment.

WOOD PULP

KRAFT OFFER

SEE

PAGE 21!

Diamond-F

PROTECTIVE PAPERS

Glassine
Vegetable Parchment
Parchmoid
Greaseproof

Diamond Fibre Receptacles of all kinds

Diamond State Fibre Company

Dept. 27

BRIDGEPORT, PENNSYLVANIA (near Philadelphia)

TRAIN SMITH COMPANY

Paper Mill Supplies

10 Milk St. (Old South Bldg.), Boston, Mass.

Packing House: Chelsea, Mass.
Branches: London-Liverpool

PARSONS TRADING COMPANY

Paper Exporters

17 Battery Place New York

London Stockholm Bombay Shanghai Wellington
Havana Buenos Aires Mexico Rio de Janeiro Naples
Parsons Trading Company (Australia), Limited
Sydney Melbourne

ATTERBURY BROS.

(INCORPORATED)

WOOD PULP, RAGS AND PAPER STOCK, FRENCH CASEINE

145 NASSAU STREET (POTTER BLDG) NEW YORK

CABLE ADDRESS REGHAMMOND NEW YORK
TELEPHONE VANDERBILT 4568-9

R. F. HAMMOND

342 MADISON AVENUE
NEW YORK

WOOD PULP PAPER

PULP STONES

INTERNATIONAL PULP-STONE CO.

ELYRIA, OHIO

PRICE & PIERCE., Ltd

17 East 42d Street, New York

Sole Selling Agents for Bathurst Company Ltd.
BATHURST, N. B.

Kraft Pulp and Easy Bleaching Sulphite

INTERNATIONAL PULP CO.

NEW YORK CITY

ASBESTINE PULP + FILLER

90% Retention

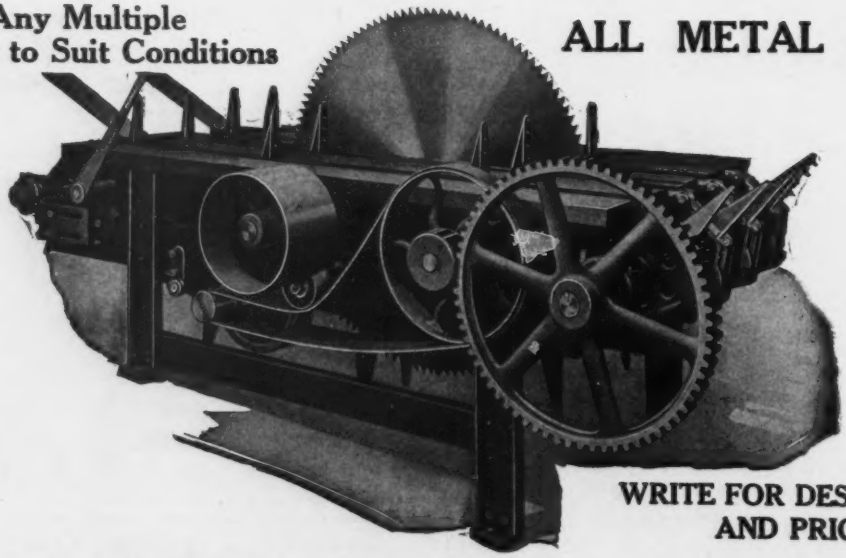
857. U. S. PATENT OFFICE

XUM

PULP AND PAPER
OF
EVERY DESCRIPTION
HUDSON TRADING COMPANY
300 Madison Avenue
NEW YORK
ESTABLISHED 1886
CABLE ADDRESS: "HUDTRACO," NEW YORK

DANA T. McIVER
High Grade Printing Paper
116 So. Michigan Avenue
CHICAGO
BOOK AND COATED PAPER
Car Lot and Tonnage Contracts

FITCHBURG DUCK MILLS
ESTABLISHED
1844.
FITCHBURG, MASS.
MANUFACTURERS OF
Standard and Multiple
DRYER FELTS
English Weave in Two, Three, Four, Five and Six Ply
60 Inches to 176 Inches in Width
Fine Faced Felts for Fine Papers
Absolutely No Felt Marks in Paper
TRIUNE Three Ply Felts for Coarse Papers

SINGLE SAW SLASHER
Built in Any Multiple
Required to Suit Conditions
ALL METAL FRAME

WRITE FOR DESCRIPTION
AND PRICES
WATERVILLE IRON WORKS
Waterville, Maine

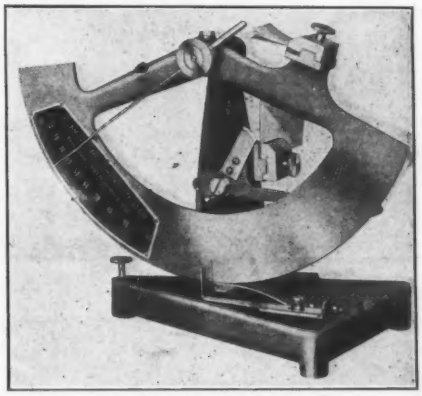
CALDWELL SERVICE

HALF a million dollars worth of well-selected stock, constantly maintained, and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

H. W. CALDWELL & SON CO.
LINK-BELT COMPANY, OWNER
CHICAGO, 17th Street and Western Avenue
NEW YORK, Woolworth Building

1

ELMENDORF PAPER TESTER



Visit Booth 40—Chemical Show

Bring your paper samples and have them tested. Compare samples with standard papers. The only test for brittleness of paper.

THWING INSTRUMENT CO.
3341 Lancaster Ave. PHILADELPHIA
New York Office, 47 W. 18th St.

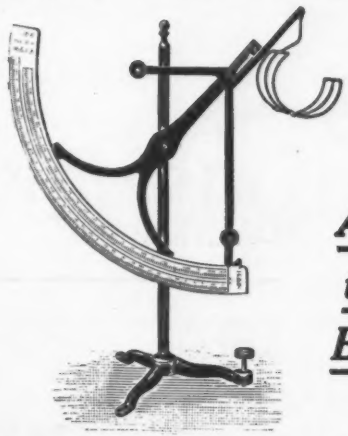
ALVAH MILLER, Pres. TOM T. WALLER, Vice-Pres.
NATH'L L. MILLER, Secy-Treas.

Craig-Becker Company
INC.

Domestic and Foreign Ground Wood and Sulphite

52 VANDERBILT AVE.
NEW YORK CITY

SCHOPPER
STANDARD PAPER TESTERS



Are the Best

Full Sheet Paper Scale

Standard Scale for telling actual weight per ream of 480 and 500 sheets in the size of the sheet that is weighed. Graduated ½ to 125 lbs. Brass weight comes with the Scale to double its capacity.

FOREIGN PAPER MILLS, Inc.
U. S. A. *Sole Agents* CANADA
72 Duane Street New York, N. Y.

Entered as Second-Class Matter June 20, 1879, at the New York Post Office, Under Act of Congress, March 3, 1879.
Published Every Thursday by the Lockwood Trade Journal Co., Inc., New York

XUM

ESTABLISHED 1882 INCORPORATED 1921

IMPORT EXPORT

RAGS NEW CUTTINGS

JUTE STOCK
ROPE

KATZENSTEIN & KEENE

(INCORPORATED)

63 PARK ROW, NEW YORK

J. ANDERSEN & CO.

21 EAST 40th STREET, NEW YORK CITY

Importers of Chemical Pulps

BLEACHED and UNBLEACHED

Agents for Kellner Partington Paper Pulp Co., Ltd. Sarpsborg, Norway; Forshaga, and Edsvalla, Sweden.

TRADE JENKINS MARK Jenkins Bros

Permanence

Jenkins Valves always give that permanent service you expect of them. Designed, made, tested, and guaranteed for the maximum service, and not merely the average—that's the reason. Jenkins Valves for all requirements. Know the genuine by the Jenkins "Diamond" and signature. At supply houses everywhere.

JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal London

2537-J

Jenkins Valves

SINCE 1864

Whalen Sulphite Pulps

Made from the SITKA SPRUCE of BRITISH COLUMBIA. Noted for Fibre, Color and strength.

SNOWHITE
BLEACHED
GLACIER

EASY BLEACHING
SWAN
STRONG

As exclusive selling agents for the Whalen Pulp & Paper Mills, Ltd., we solicit your inquiries to any of our offices.

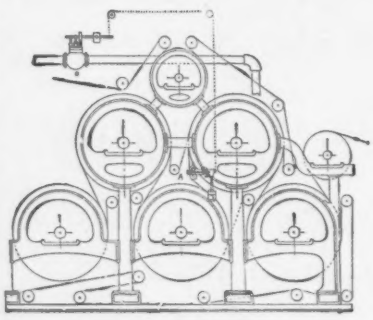
Canadian Robert Dollar Co.

LIMITED

VANCOUVER, B. C.

U. S. ADDRESSES

Robert Dollar Co., Robert Dollar Bldg., San Francisco
Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.



WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES, BUCKLAND, CONN.

Boxboard Paper Board Specialties

Have you ever considered the advantages of doing business with the organization which guarantees the most satisfactory service, prices and deliveries?

It's worth your while to investigate what we can do for you.

The C. L. La Boiteaux Co.

Cincinnati Cleveland Chicago New York

NORWOOD FILTERS

Especially designed to meet all Paper Mill needs

NORWOOD ENGINEERING CO.

Florence, Mass., U. S. A.

Daily Capacity of 600 Air-Dry Tons

The extent of our production of High Grade

BLEACHED Sulphite Fibre

insures uniform quality, prompt shipments and market prices

BROWN COMPANY

founded 1852

PORTLAND MAINE

Mills at Berlin, New Hampshire

NEW YORK CITY Woolworth Bldg.

CHICAGO

The

St. Regis Paper Company

and the

Hanna Paper Corporation

Daily Capacity, 425 Tons

Newsprint
Catalog
Butchers' Manila
Packers' Oiled Manila
Jute Container Board
Ground Wood and Unbleached Sulphite

Manufacturers of

TARZAN Fibre Shipping Cases

General Sales Office:

30 East 42nd St. New York

CHICAGO PITTSBURGH

648 McCormick Bldg. 1117 Farmers Bank Bldg.

XUM

Cutting Dies

of superior quality

NO matter how intricate or involved the design is, we'll make it and make it right. Every die of carefully selected steel, guaranteed flawless and warranted to give long, satisfactory service. The more difficult your die-cutting problems the more we'll enjoy helping you solve them. Send us a rough sketch or description of what you want and we'll tell you if it is practically possible to produce it.

Circular, oval and elliptical dies in all sizes. Envelope dies for both regular and open-end shapes. Dies for labels and cut-outs of every conceivable kind. Glove dies, shoe dies, cloth-cutting dies—we make them all. Write for descriptive booklet, illustrating 50 different dies, many of which are very intricate, showing what seemingly impossible designs we are able to make.

The* INDEPENDENT DIE CO., *Inc.
2641 LaSalle Street
ST. LOUIS, MO.

Vortex
DRINKING CUP
(Patented)
June 20, 1916, Reissued June 13, 1922; March 26, 1918; April 18, 1922; Other Patents Pending
Canadian and Other Foreign Patents Granted and Pending
"One who manufactures, who uses, or who sells a device that infringes a patent is equally an infringer."
Look for our trade-mark "VORTEX" on all cartons and tubes

Sell At Sight

THE superior merit of Vortex drinking cups is instantly recognized.

Sales are made with ease; repeat orders are assured; Millions are used daily.

Vortex cups are the original conical cups—the leaders of sanitary drinking service.

They represent the highest quality. Strong, convenient, odorless and tasteless.

The low price of Vortex is a further selling advantage.

Vortex will build a profitable business for you.

Write for prices today.

THE VORTEX MFG. CO.
421-431 N. Western Avenue
Chicago, Ill.

Canadian: Wm. A. Rogers Ltd., Toronto, Manufacturers and Distributors for Canada

96

Vortex
Drinking Cups

TEXAS GULF SULPHUR

99½ Per Cent. Pure.

Produced from one of the largest known deposits in the world.

Texas Gulf Sulphur Company
General Offices
41 East 42nd Street, New York, N. Y.

Sulphur Deposit and Plant, Matagorda County, Texas

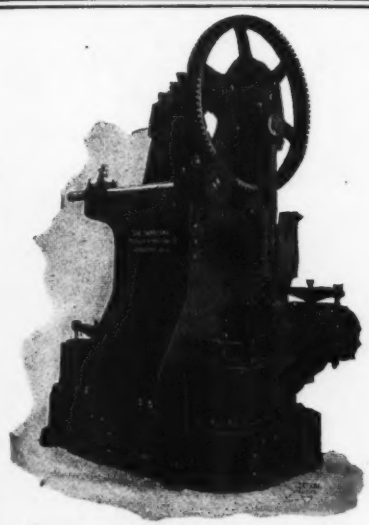
COLLINS MANUFACTURING COMPANY

SAMUEL R. WHITING, Pres. and Treas.

Manufacturers of

LOFT DRIED PAPERS
LEDGERS
BONDS
WRITING PAPERS

Mill:— North Wilbraham, Mass.
Main Office:
208 Race Street Holyoke, Mass.



Save Power

Hayton Centrifugal pumps are designed for each kind of service. They are built for hard, continuous operation and will stand up under hard usage.

They are made to fit the working conditions and guaranteed to get the highest efficiency.

We also build the full line of Sandusky Triplex pumps.

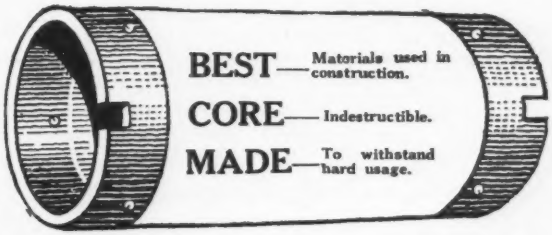
Let us have your specifications for quotations.

HAYTON PUMP & BLOWER CO.
MANUFACTURERS
APPLETON WISCONSIN

THERE IS NO DIVIDING LINE

ELIXMAN CORES

can now be secured as promptly and cheaply in Canada as in the United States.



We have opened a new plant at Hamilton, Ontario, where the needs of Canadian Paper Manufacturers will be cared for promptly.

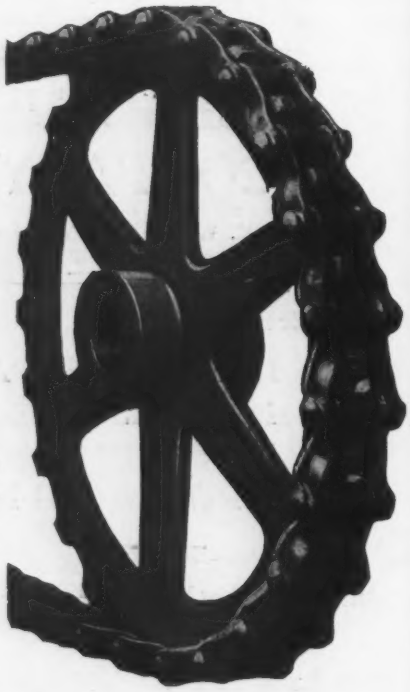
Our plants are located

Canadian Elixman Co.
HAMILTON, ONTARIO

Elixman Paper Core Co.
CORINTH, N. Y.

Jeffrey Reliance Riveted Malleable Chain

A good General Service Chain for Elevators, Conveyors and Power Transmission



Jeffrey Chains for Paper and Pulp Mill Service

are not "just chains," but chains which combine all the qualities and features demanded where greatest production and continuous operation is to be obtained.

There's a type for every purpose.
Write for our Chain Catalog.

Jeffrey Standard Material Handling Machinery includes Conveyors and Elevators for handling Logs, Pulpwood, Pulp Laps, Straw, Bark, Coal and Ashes, etc.; Crushers; Pulverizers; Shredders; Portable Bucket Loaders; Portable Belt Conveyors; Portable Car Unloaders (Coal); Electric Industrial Locomotives, etc.

The Jeffrey Manufacturing Co.
931-99 North Fourth St., Columbus, Ohio

JEFFREY
MATERIAL HANDLING MACHINERY

EVERYTHING IN

PULP & PAPER

J. E. PATTON CO., INC.
342 Madison Ave.
New York City

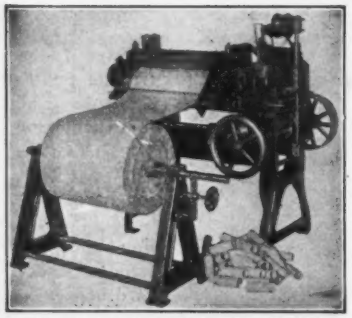
(Cable address - Pulp, N.Y.)

Dietz Toilet Paper Machinery

AND LATEST IMPROVED PATENTED

Automatic Tube Machines

For Making Tubes for Toilet Paper Rolls, Paper Towel Rolls



Patented Feb. 22, 1916, May 18, 1920.

Capable of producing 3,600

Toilet Tubes

per hour direct from roll.

Towel Tubes

are made at rate of 1,800 per hour. Substantially built and fully guaranteed.

Toilet Paper Machines for making Toilet Rolls with or without perforations and machines for making Sanitary Crêpe Paper Towels, Punch Presses for Sheet Toilet Paper, Drop Roll Slitters, Slitting and Rewinding Machines, Side and Center Seam Merchandise Envelope Machines, Photo Mount Beveling Machines, Candy Bag Machines, Punch Presses for Playing Cards, Rotary Card Cutting and Collating Machines, Etc.

DIETZ MACHINE WORKS

126-128 Fountain Street PHILADELPHIA, PA.

Corner Waterloo St., Below Diamond St., Bet. Front and 2d Sts.

JORDAN FILLINGS

For all makes of Jordans:

Jones
Emerson
Black-Clawson
Dillon
Miami
Noble & Wood
Horne

Uniformly High Grade Quality and Finish

Order BOLTON QUALITY next time and see how much longer and better service you can get for a low cost.

Prompt shipments.

JOHN W. BOLTON & SONS, INC.
Lawrence, Mass.

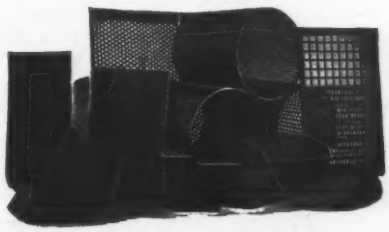
High Grade Fly Bars, Bed Plates, Jordan Fillings and Knives.

3

PERFORATED METAL SCREENS

IN STEEL AND ALLOYED METALS

For Pulp and Paper Mills



Elevator Buckets, Conveyor Flights and Troughs, General Sheet and Light Structural Work

Light and Heavy Steel Plate Construction

HENDRICK MANUFACTURING CO.
75 Dundaff Street Carbondale, Pa.
New York Office, 30 Church St.
Pittsburgh Office, 544 Union Arcade Building

Felts

Made to Suit Your Individual Needs

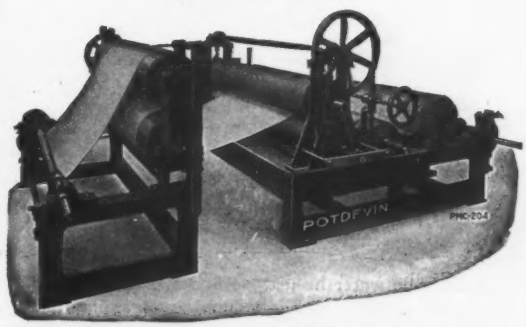
Quality Paper
Quantity Production
is another way of saying
APPLETON
Felts and Jackets

Appleton Woolen Mills
Appleton, Wis.

1

POTDEVIN

LIGHT and HEAVY
WET or DRY



PAPER WAXING MACHINERY

64 and 80" Widths

Available for inspection now

POTDEVIN MACHINE CO.
1223-38th Street, Dept. 8 Brooklyn, N. Y.

XUM

ESTABLISHED 1828 SOUTH WINDHAM, CONN.

THE SMITH & WINCHESTER MFG. CO.

MANUFACTURERS OF

PAPER BAG MAKING MACHINERY

AS ILLUSTRATED AND DESCRIBED IN BULLETIN NO. 10

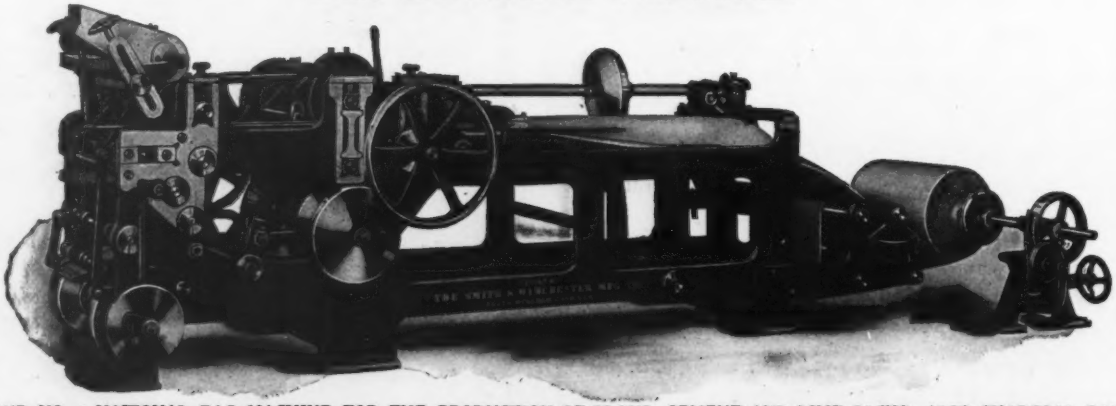
PAPER MAKING—PAPER CUTTING MACHINERY

FOURDRINIER—CYLINDER—WET MACHINES

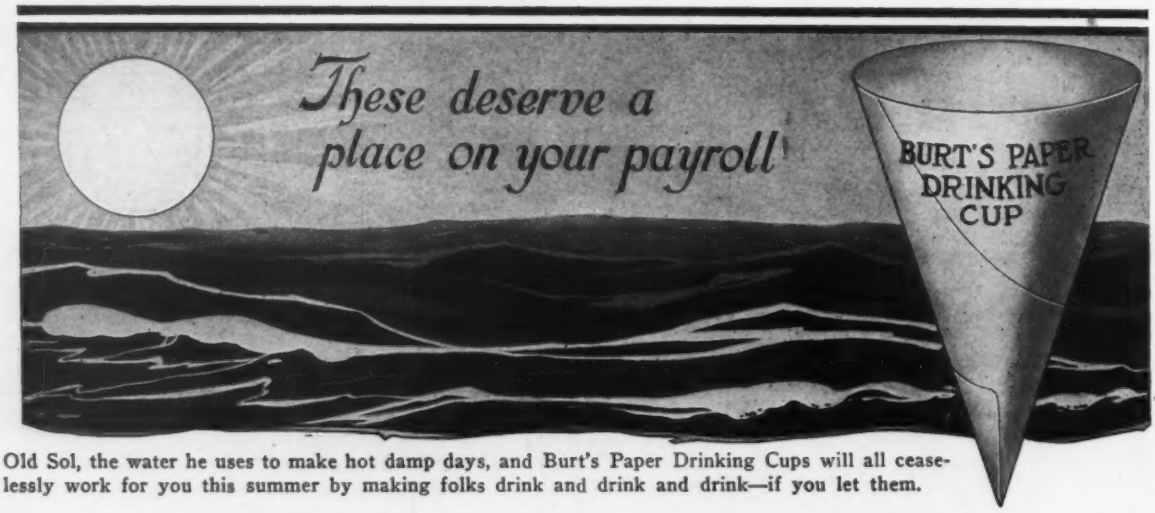
JORDAN ENGINES—PUMPS—CALENDERS—REELS—CUTTERS—WINDERS—ROLLS

THE RAINSTORM SHOWER PIPE—COLLAPSIBLE CORES

DIE CUTTING PRESSES



OUR NO. 4 NATIONAL BAG MACHINE FOR THE PRODUCTION OF FLOUR, CEMENT AND LIME SACKS; ALSO CHARCOAL BAGS



Old Sol, the water he uses to make hot damp days, and Burt's Paper Drinking Cups will all ceaselessly work for you this summer by making folks drink and drink and drink—if you let them.

Burt's Paper Drinking Cups For Particular People

Snow white of fine paper.
No wax to make drink taste.
No bottom to fall out.
Nor to set aside on.
No animal glue used.

One-at-a-time dustproof dispenser.
Of ample capacity.
No opening up and soiling.
Drinking edge untouched by hands before use.

Trebly reinforced to make holders unnecessary.
Lowest in cost.
Holds hot drinks.

You can sell such cups to particular people who stay sold and repeatedly come back for more—at a good profit to you.

F. N. BURT COMPANY, Ltd., Paper Cup Division, Buffalo, N. Y.

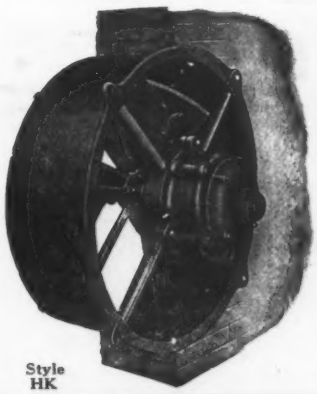
PLEASING THE INDIVIDUAL CONSUMER

Sales are dependent upon the measure of satisfaction that come to the individual through the actual use of the product purchased. Our Toilets, Napkins and Towels please the consumer. In so doing they become profitable to the Jobber who distributes them.

Fort Howard Paper Co.
Green Bay, Wis.

PERKINS

Send Today For YOUR COPY



Style HK

OF OUR NEW

Illustrated Fan Bulletin

with its numerous pictures of Belt-Driven and Direct-Connected Fans, Installations, etc., also Price Lists and valuable Tables.

Address Dept. P8

B.F.Perkins & Son
Incorporated
Holyoke, Mass., U. S. A.

Wood Plugs

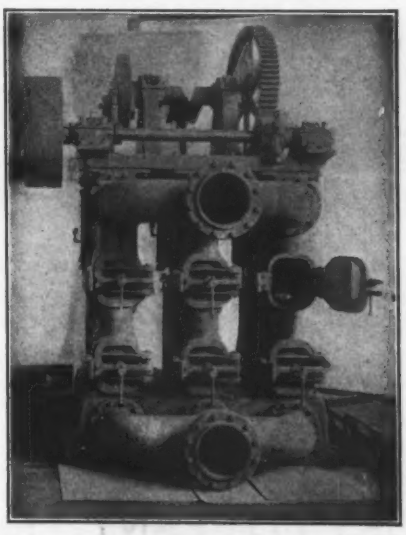
For paper rolls, made to pattern under shop names in four sizes as follows: CARD, 3"; MANILLA, 2¼"; NEWS, 2½"; DRUG, 2⅛"; 1¾" in length, having 1" hole, and tumble polished when shipped. You should if possible, adjust your needs to these stock sizes, with prospect of prompt shipping in carlots or less, thereby avoiding serious delays in waiting for something special. Samples cheerfully furnished.

O. L. BARTLETT
MOUND CITY, ILL.
Eastern Office:
855 West End Ave., New York, N.Y.

The Black-Clawson Co.

Hamilton, Ohio

Builders of All Types of Paper Making Machines and Machinery



for PAPER and PULP MILLS

Successful machines in operation are proof our work is built right.

XUM

HANS LAGERLOEF, Pres. and Treas.
ORVAR HYLIN, Vice-President
MAURICE LONDON, Secretary

Telephones
Murray Hill { 4246
4247

TRADE MARK

Lagerloef Trading Company, Inc.

WOOD PULP

52 VANDERBILT AVENUE, NEW YORK, N. Y.

Sole Agents in U. S. A., Canada, Mexico and Cuba for

FINNISH CELLULOSE ASSOCIATION, HELSINGFORS, FINLAND

AND

FINNISH WOOD PULP UNION, HELSINGFORS, FINLAND

Starch

Paper manufacturers generally recognize the value of starch in the manufacture and coating of paper.

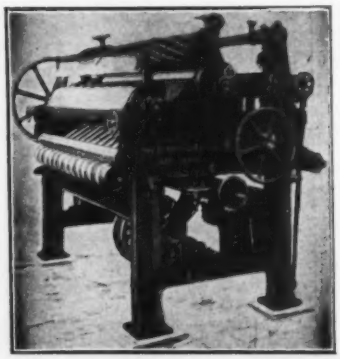
To obtain definite results in any desired direction in the preparation of paper, not merely a difference of grade, but a difference of kind or variety of starch is required.

Our carefully controlled and thoroughly standardized processes enable us to produce exactly the various starches which the paper industry has found economical and efficient.

Corn Products Refining Company
17 Battery Place **New York**

THE CLARK-AIKEN CO.

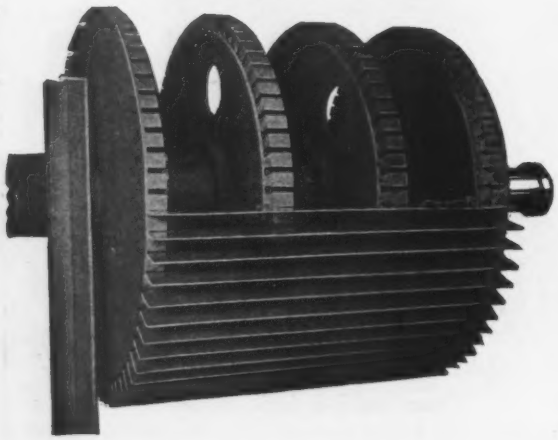
Successors to
H. C. Clark & Son Machine Co.
PAPER MILL MACHINERY
LEE, MASS.



Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—

Cylinder Molds—Marshall Drives—Slitters and Rewinders—Reels—Dryers with Improved Packing Boxes—Wet Machines—Gun Metal and Rubber Rolls—Rolls Reground.

Starch



Dilts Machine Works, Inc.

Fulton, N. Y., U. S. A.

Manufacturers of

BEATING and WASHING ENGINES
FLY BARS—BED PLATES—
MACHINE KNIVES

Our new KEYED TYPE BANDLESS ROLL is the final result of many Years of Experience.

May we not tell you about its many advantages?

We offer a full line of

COLORS

and furnish precise directions on application for

Beater Dyeing, Staining and Coating

Half a century's experience enables us to furnish goods answering requirements and to give reliable service

THE HELLER & MERZ CO.

BOSTON CHICAGO NEW YORK PHILADELPHIA SPRINGFIELD, MASS.

Reproduction of impression left by old style Kenwood Board Felt under same pressure.

Reproduction of direct impression from Kenwood One-sided Board Felt under pressure.

It's a matter of simple demonstration

The KENWOOD One-Sided Board Felt Combination

enables the paper maker to produce a smoother sheet. Speaking of paper made on this combination, one mill says:

> "A splendid sheet, very smooth surface and wonderful finish. Good, safe 100 test and a very superior sheet."

Kenwood One-Sided Felts give longer service because they are stronger—give better finish because they are smoother—give greater speed because they are more open.

F.C. HUYCK & SONS

Kenwood Mills, Albany, N. Y.

Also made at Kenwood Mills, Ltd., Arnprior, Ontario, Can.

KENWOOD WOOL PRODUCTS

B.D.

SULPHITE

MACKMYRA

"M S"
Mitscherlich Sulphite

IGGESUND

"ANCHOR BRAND"
Unbleached Sulphite

BERGVIK

"GOAT BRAND"
Unbleached Sulphite

WE ARE BOOKING
Spot Shipments From Dock
and
Monthly Shipments From Sweden On Contract

SOLE SELLING AGENTS

BULKLEY DUNTON & COMPANY
75-77 DUANE STREET. NEW YORK
ESTABLISHED 1838

MEMBER OF THE A. B. C.

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

PUBLISHED EVERY THURSDAY BY THE

LOCKWOOD TRADE JOURNAL COMPANY, INC.

LESLIE R. PALMER, President — J. W. VAN GORDON, Vice-President

Telephone { 2380 / 2381 / 2382 } Vanderbilt — *10 EAST 39TH ST., N. Y., U. S. A.* — Cable Address Catchow, New York

Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston
Washington Office—L. M. Lamm, 63 Home Life Bldg.
Western New England News Office—Michael Connor, Holyoke
London Office—Stonhill & Gillis, 58 Shoe Lane

THE PAPER TRADE JOURNAL is the pioneer publication in its field, and has for many years been the recognized Organ of the Paper and Pulp Industry. Its circulation is greater than the combined circulation of all other publications in the field. Entered at New York Post Office as second-class mail matter.

Terms of Subscription

UNITED STATES AND MEXICO.....Per year, $4; 6 months, $2; 3 months, $1
CANADA AND FOREIGN COUNTRIES IN POSTAL UNION.....Per year, $6
SINGLE COPIES .....10 cents

Other Publications of Lockwood Trade Journal Company, Inc.

AMERICAN STATIONER AND OFFICE OUTFITTER (Weekly).....Per year, $3
LOCKWOOD'S DIRECTORY OF THE PAPER STATIONERY AND ALLIED TRADES (Annual).....Per copy, $7

Vol. LXXV. No. 9 — NEW YORK AND CHICAGO — Thursday, August 31, 1922

Table of Contents

News of the Trade:

	PAGE
St. Regis and Hanna Mills Increase Wages	16
Changes in Proposed Tariff	16
Hurrying Work on Tariff	16
Westminster Paper Co. Incorporated	16
Oregon Pulp & Paper Co. Builds $300,000 Mill	17
Miami Valley Superintendents Meet	17
P. H. Glatfelter Improvements Progressing	17
Testing Australian Timber for News Print	17
American Writing Distributors at Holyoke	17
Hammermill Sales Agents Hold Conference at Erie	18
Machine for Imparting Linen Finish to Paper	19
Vocational Education in the Pulp and Paper Industry	19
Wages Paid in Paper Mills	19
Philadelphia Board Prices Increase	20
Huff Paper Co. to Incorporate	20
Scott Paper Co. Rushing Improvements	20
New Paper for Carbon Manufacturers	20
National Safety Council Meets in Detroit	22
Safety in the Wood Room	22
Foreman's Responsibility for Employees	28
Keeping Plant Paper From Going Stale	30
Tidewater Paper Mill Sold	34
Safety from the Superintendent's Viewpoint	36
Improving Foremanship	38
Graphic Arts Exposition Opens in Boston	39
Paper Maker Father of Twentieth Child	43
Johns-Manville Mill at Waukegan Almost Ready	43
Water Power in Canada	43
A Warning to the Trade	43
Ventilating Fans for Paper Mills	43
Safety Code for Paper and Pulp Mills	46
Chrystal Twine Co. Appeals Judgment	46
New York Trade Jottings	60
News of Chicago Trade	60
Imports and Exports of Paper and Paper Stock	64

Editorial:

	PAGE
The Value of Technical Matter	42
Canadian Paper Exports Decline	43

Technical Section:

	PAGE
Chemical Exposition to Open September 11	45
Determination of the Cellulose Content of Wood by Action of Chlorine in Carbon Tetrachloride	47
Paper Testing Methods and Apparatus	48
A Dictionary of Paper Terms	49
Current Paper Trade Literature	53
Giant Grasses for Paper Making	53
Bleaching of Ground Wood	53
Heat Economies in the News Print Industry	54
Cotton Rope Drives	54
Electric Steam Boiler	54

Market Review:

	PAGE
N. Y. Market Review	62
Market Quotations	63
Miscellaneous Markets	66

Want and For Sale Advertisements, Pages 68 and 69

XUM

ST. REGIS AND HANNA MILLS RAISE WAGES OF EMPLOYEES

Voluntary Payroll Increase Affects Over 800 Workers and Involves Annual Advance of $70,000—Applies to All Employees Receiving Less Than 54 Cents an Hour—Floyd L. Carlisle Finds Arbitration Wage Insufficient—Announces Increase of Three Cents Per Hour to Take Effect September 3—Recognizes Increase in Workers' Living Costs.

WATERTOWN, N. Y., August 28, 1922.—A voluntary advance of three cents an hour to all employees receiving less than 54 cents an hour has just been granted by the St. Regis Paper Company and the Hanna Paper Corporation. More than 800 men in the two companies are affected and the advance in payroll will be about $70,000 a year.

President F. L. Carlisle came up from New York Thursday morning and went to Deferict at 5 o'clock in the afternoon to take up the wage question with a committee of employees from the Hanna mills at Norwood, Norfolk and Raymondville and the St. Regis mills at Deferiet, Herrings and Black river. At the conference Mr. Carlisle outlined the plan of the company to give due recognition to the advance in living costs to employees and to make the increase in pay of three cents an hour effective on September 3. The present scale was fixed last spring by the arbitration board but was found to be insufficient. Mr. Carlisle said that he had been planning to get up from New York sooner to make the adjustment.

The fact that the deal was adjusted without the usual wrangle with international heads, but between the officers and employees of the company direct is considered an indication of a wholesome relationship in these concerns.

The mills of both companies are being run at capacity production with about 1,100 men employed.

Changes in Proposed Tariff

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., August 30, 1922.—Official copies of the tariff bill as it was finally passed by the Senate have become available since the last issue of the PAPER TRADE JOURNAL. The changes made in the bill have been consistently recorded in this paper.

Paragraph 1301, which is the first paragraph in Schedule 13, devoted to papers and books which deals with printing paper, was left exactly as it was passed by the House. The rate on printing paper "not specially provided for" remained at one-fourth of one cent per pound and 10 per cent ad valorem.

In paragraph 1302 the Senate added the word "wall board" to paper board and pulp board, etc., and in the same paragraph added the following: "pulp board in rolls, for use in the manufacture of wall board, 5 per centum ad valorem." The Senate also added the following phrasing to the same paragraph:

"If any country, dependency, province, or other subdivision of government imposes a duty on any article specified in this paragraph, when imported from the United States, in excess of the duty herein provided, there shall be levied upon such article when imported, either directly or indirectly from such country, dependency, province, or other subdivision of government, a duty equal to that imposed by such country, dependency, province, or other subdivision of government, on such article imported from the United States."

In paragraph 1303, devoted to filter masse or filter stock, the Senate changed the House rate of 1½ cents a pound and 15 per cent ad valorem to a straight 20 per cent ad valorem rate. In the same paragraph the Senate raised the House rate on "manufactures of paper mache not specifically provided for from 23 per cent, as passed by the House, to 25 per cent.

In paragraph 1304, devoted to tissue paper, the Senate struck out the House words "paper and all papers not specially provided for in this section," and inserted in lieu thereof the following:

"Copying paper, india, and Bible paper, condenser paper, carbon paper, coated or uncoated, bibulous paper, pottery paper, tissue paper for waxing, and all paper similar to any of the foregoing, not specially provided for, colored or uncolored, white or printed."

In the same paragraph the Senate also struck out the weight basis of 8 pounds to the ream and inserted 6 pounds to the ream. The following was also added by the Senate to the same paragraph, No. 1304, "india and Bible paper weighing over 10 pounds and less than 18 pounds to the ream, 4 cents per pound and 15 per centum ad valorem."

In paragraph 1305, devoted to coated papers, the Senate raised the House rate from 5 cents per pound to a duty of 5 cents per pound and 15 per cent ad valorem.

In paragraph 1308, devoted to paper envelopes not specially provided for, the Senate struck out a large part of the paragraph and the paragraph as it finally passed the Senate now reads as follows:

"Par. 1308. Paper envelopes not specially provided for shall pay the same rate of duty as the paper from which made and in addition thereto, if plain, 5 per centum ad valorem; if bordered, embossed, printed, tinted, decorated, or lined, 10 per centum ad valorem; if lithographed, 30 per centum ad valorem."

The other items contained in the paper schedule are not of special interest to readers of PAPER TRADE JOURNAL, but several items are carried on the free list and as they finally passed the Senate these paragraphs now read:

"Par. 1616. Mechanically ground woodpulp, chemical woodpulp, unbleached or bleached.

"Par. 1653. Rag pulp; paper stock, crude, of every description, including all grasses, fibers, rags, waste, including jute, hemp and flax, waste, shavings, clippings, old paper, rope ends, waste rope, and waste bagging, and all other waste, not specially provided for, including old gunny cloth, and old gunny bags, used chiefly for paper making, and no longer suitable for bags.

"Par. 1675. Standard newsprint paper."

Hurrying Work on Tariff

In spite of all the rumors to the contrary, reliable information is to the effect that the conferees on the tariff bill are hurrying their work and that the conference will end about October 1. There has been a great deal of talk in Washington recently to the effect that the republicans would delay the tariff bill until after the election, but this is not given much credence among those who have followed the situation closely.

There is here some talk also that the work of the tariff conferees would be slowed up because the same conference would have to work on the bonus bill. It has pointed out that there is a possibility that Senators Curtis, Watson of Indiana and Walsh of Massachusetts, all of whom are members of the Finance Committee, might act as conferees for the bonus bill instead of waiting for the tariff conferees to complete their work, thus holding up both measures. It is understood that the tariff conferees are making progress in their work.

Westminster Paper Co. Incorporated

MONTREAL, Que., August 28, 1922.—The Westminster Paper Company has been incorporated at New Westminster, B. C., with a capital of $250,000, to manufacture tissue paper for fruit wrappers and similar purposes. Pulp will be secured from the plants already operating in British Columbia and work has commenced on the company's plant, machinery having been ordered.

XUM

Oregon Pulp & Paper Co. to Build $300,000 Mill

SALEM, Ore., August 17, 1922.—The $300,000 additional unit of the bond paper plant belonging to the Oregon Pulp and Paper Company, of Salem, will make the local mill, already the most modern in the Northwest, one of the finest in the world. Work on the unit was started last week by C. Van Patton & Son, to whom the contract was awarded, and besides adding approximately 75 men to the payroll of the existing plant of the company it will afford the Pacific Coast its first bond paper mill.

Today's announcement of the company also holds the intimation that the proposed fourth unit of the mill, which would provide the facilities for an ultimate daily production of 100 tons of paper and give employment to between 300 and 400 people, may be constructed next summer and that, with the completion of the fourth unit and the installation of a fourth machine, news print may be added to the mill's products.

The question of deviating from the present policy of manufacturing only high-grade papers, for which they have built up a demand which today finds the mill running at capacity and still three months behind its orders, is a matter to be determined in the future, company officials pointed out, however. Numerous letters from the trade testifying to the exceptional quality of the paper now being turned out from the local mill are among the exhibits in which the company officers take considerable pride.

Besides the paper-making machine there will be installed in the new unit additional beaters, Jordon, all necessary stock chests and finishing room machinery, such as trimmers, cutters, rewinders—in fact, a complete plant to make it possible to handle not only the new production, but also to round out the equipment already installed.

The new 116-foot Bagley & Sewall Foudrinier to be installed is a decided improvement over the two machines now in operation and it will not only have a larger fourdrinier end but will have a Millspaugh suction couche roll, a Millspaugh suction press and first and second granite press rolls, smoothening rolls, about 50 per cent more drying capacity; also it will be driven by the General Electric Company's individual motor drive.

There is no better wood than that which can be secured locally, and the water is as good as anywhere, in fact, better than most mills. The water is flumed in from the Santiam River, a mountain stream, and after reaching the mill is passed through a complete California Filter Company's filtering system of the pressure type, which is able to handle 6,000,000 gallons of perfectly filtered clear water.

Miami Valley Superintendents Meet

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 28, 1922.—The annual outing of the Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association was held Saturday afternoon at Shartle's Grove, near Franklin, in Warren county.

There was a large attendance and the event was voted a success in every particular.

While an effort was made to relegate business affairs and not get too deep in the discussion of trade topics, it was found impossible to sidestep some issues.

In the early evening a good chicken dinner was served. W. H. Server, superintendent of the Miami Paper Company's mills at West Carrollton, presided as chairman of the meeting.

Following the dinner various speakers were called on to tell what they knew of "Water Temperature in the Manufacture of Paper and Its Effect."

The subject was considered of prime importance and brought forth opinions of various kinds. However, all were agreed on the main points, and the importance of keeping and maintaining the proper temperature to obtain good results in manufacturing different grades of paper.

The afternoon, which was ideal, following several days of rainfall and intermittent storms, was spent in enjoying diversions of all sorts. It was one of the most pleasant gatherings of the year and marked the beginning of a series of similar meetings, it is predicted.

Practically all of the Miami Valley mills were represented.

While the superintendents do not discuss trade conditions, their work being devoted largely to the manufacturing end, they were a unit in expressing the belief that business is steadily on the mend and soon will be all that could be expected, providing the coal and rail strikes are adjusted to the satisfaction of the industry.

P. H. Glatfelter Improvements Progressing

[FROM OUR REGULAR CORRESPONDENT]

SPRING GROVE, Pa., August 28, 1922.—The Aberthaw Construction Company, of Boston, which has the contract for the construction of the new buildings for the P. H. Glatfelter Company, has about completed the storage building, the beater room, and the machine room. The new finishing room is under roof and the entire group of buildings will be completed in about a month. The construction of the buildings involved many difficult features. It was necessary to move a row of seven dwelling houses a distance of four hundred feet and the heavy brick-and-stone office building about three hundred feet.

The erection of the 170-inch Black-Clawson paper machine is well under way and the installation of sectionalized General Electric Company drive is following closely. Much of the auxiliary equipment is ready to operate.

While no definite time has been set for putting the new plant in operation, it is confidently expected that the new machine will be making paper very soon.

Testing Australian Timber for News Print

[FROM OUR REGULAR CORRESPONDENT]

MELBOURNE, Australia, August 1, 1922.—Faced with the problem of paying high prices for paper, especially news print, all of which is imported into the Commonwealth of Australia from Europe and America, a final successful test to determine whether Australian timbers can be used for pulp has been made. Experiments at the Perth Laboratory of the Commonwealth Institute of Science and Industry have proved conclusively that high yields of good paper pulp can be obtained from three important Tasmanian timbers.

Sometime ago samples of Australian timber were sent to England for the purpose of ascertaining whether they were suitable for the manufacture of paper pulp. Replies were received that the wood was valueless for the purpose. The Director of the Commonwealth Institute of Science and Industry, G. H. Knibbs, stated that the method of treating these timbers abroad was quite unsuited to Australian woods, however satisfactory it may be for Northern Hemisphere timbers such as spruce and poplar. The tests at the Perth laboratory were made according to less costly methods than those adopted abroad and showed a better yield of stronger pulp.

American Writing Distributors at Holyoke

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., August 28, 1922.—Representatives of the service houses of the American Writing Paper Company were in conference here at the company's office during the past week. President George A. Galliver and Dr. Ralph Rindfusz addressed the visitors. Joseph Borden, director of the general service department of the company, was in charge of the meetings. Service houses from all parts of the country were represented. Plans for the coming season were outlined and the work of the past few months were discussed.

XUM

HAMMERMILL SALES AGENTS HOLD CONFERENCE AT ERIE

Annual Meeting Is One of the Most Largely Attended and One of the Most Successful in the History of These Gatherings in Spite of the Fact That Sports Are Somewhat Interferred with By Unfavorable Weather—Representative Paper Merchants From All Sections of the Country Attend—E. R. Behrend, President of the Company, and Others Make Inspiring Addresses.

[FROM OUR REGULAR CORRESPONDENT]

ERIE, Pa., August 28, 1922.—"Hammermill Days" have become fixed events in the Nation's business affairs and their mere announcement annually is eagerly anticipated by those who have been fortunate in the past to be included "among those present." Paper merchants from coast to coast and the Gulf to the Great Lakes, who have helped to make "Hammermill Products" known throughout the country, were in attendance at Erie on Wednesday, Thursday and Friday of last week.

Opening Address By Mr. Behrend

The 1922 meeting marked the high tide in the success of the company in bringing about the best possible relations between it and its sales agents. The business sessions opened Wednesday noon at the Kahkwa Country Club with an address of welcome by E. R. Behrend, president of the company, who paid tribute to the untiring zeal and disinterested efforts given by the advisory committee which are of benefit to the entire fine paper trade. The advertising committee also shared in his praises for its effective work and he made a plea for the continued selection of high calibered men to these committees. Mr. Behrend mentioned the fact that it was the first important meeting in twenty-four years which his brother, Dr. Otto F. Behrend, treasurer of the company, had missed, his absence being due to a recent automobile accident which has confined him to the hospital for several weeks.

Continuing, Mr. Behrend in his plea for close co-operation between the company and its agents said, "We must have in mind the thought of Alexander Pope: ''Tis with our judgments as our watches; none go just alike, yet each believes his own.' If we have this realization, we can make this conference of the highest value to all of us."

Addresses By Mr. Wilson And Others

Norman W. Wilson, vice-president of the company, spoke on business conditions, saying: "Business has been very sick, but is now much improved. In the light of price tendencies of the majority of important commodities of the country, the fine paper business is on a conservative and sound basis. In spite of the business conditions usual in summer, Hammermill has operated on a continuous production schedule, and our problem is to meet the demands which should come with the cooler months."

A number of charts showing orders and production for more than twenty years past were used by W. S. Epply, manager of sales, to illustrate his talk on sales promotion. Forthcoming national advertising and other selling aids were explained by C. W. Chabot, advertising manager.

Progress made through eleven years of Hammermill conferences was made the subject of a stimulating address by Charles J. Babcock, of the George Batten Company, advertising counsellors. James Logan, president of the United States Envelope Company; E. V. Johnson, manager of the P. P. Kellogg and Company division of the U. S. Envelope Company, and George R. Burkhardt, of White and Wyckoff Manufacturing Company, addressed the agents on business topics in connection with the converted lines.

General Discussions on Thursday

Thursday was given entirely to general discussions and it was well into the evening before the meetings were adjourned for dinner. During the afternoon session the following were elected to the advisory and advertising committees:

Advisory committee, Harold J. Zellerbach, of the Zellerbach Paper Company, San Francisco; Geo. W. Ward, of D. L. Ward Company, Philadelphia, and M. D. McAlpine, of the Bradner Smith Company of Chicago. Advertising committee: Paul E. Vernon, of New York; A. M. Miller, of Central Ohio Paper Company, Columbus, and A. B. Sherrill, of Riegel & Co., Inc., Philadelphia.

Remarks By Prominent Paper Men

At the close of the dinner addressed were made by Mr. Behrend who acted as toastmaster, W. F. McQuillen, John Leslie, Ross P. Andrews and Mayor Miles B. Kitts, of Erie, who left a family reunion to say a welcome to the visitors and pass the key of freedom during their stay. With two days of strenuous work aside, Friday was to be the day of relaxation and merriment but the outdoor pleasures were interferred with owing to continuous storms which prohibited the athletic events excepting golf. The enthusiasts of the latter game played throughout the day in the downpour.

The East claimed a forfeit of the baseball championship as the leader of the Western team, Lou Colton, was observed hanging to the tail of the cyclone as the cloudburst drove the contestants to cover for the rest of the day. The Easterners' claim will probably be arbitrated next year.

Indoor games were provided to take the place of the outdoor events and an excellent musical program by a band made up of the company's own employees helped to make pleasant the first day of unfavorable weather ever experienced at these annual events. During the evening while enjoying the best of the club chef's culinary art, prizes were awarded to the winners of the golf contests. With all singing, "'Till We Meet Again," the eleventh annual Hammermill conference passed into history as being the best, from every angle, ever held.

Those Who Were Present

Among those present were:

M. L. Kratz, W. T. Sibley, Alling & Cory, Buffalo.

A. H. Seylor, A. H. Smith, Alling & Cory Company, Pittsburgh.

B. E. Reeves, H. L. Austin, Alling & Cory Company, Rochester, N. Y.

W. H. Miles, Donald McIntosh, American Paper Exports, New York.

Ross P. Andrews, William N. Schaeffer, Al Tennyson, R. P. Andrews Paper Company, Washington, D. C.

B. R. Moore, R. P. Andrews Paper Company, York, Pa.

J. E. Stonebraker, W. B. Littleton, Antietam Paper Company, Hagerstown, Md.

William H. Johns, Charles J. Babcock, William J. Boardman, George Batten Company, New York.

R. L. Tillman, Beacon Paper Company, St. Louis, Mo.

Harold Helmer, Beecher, Peck & Lewis, Detroit, Mich.

Max Greenebaum, Beekman Paper and Card Company, New York.

W. J. Herrmann, E. A. Bouer Company, Milwaukee, Wis.

Robert Wadsworth, R. S. Bull, M. D. McAlpine, Bradner Smith & Company, Chicago, Ill.

Charles W. Dau, Carpenter Paper Company, Des Moines, Ia.

B. M. Anderson, Carpenter Paper Company, Omaha, Neb.

D. Clinton Smith, Carter Rice & Carpenter, Denver, Col.

H. L. Carter, Carter, Rice and Company, Boston, Mass.

S. S. Dillard, Caskie Dillard Company, Inc., Lynchburg, Va.

Albert M. Miller, Central Ohio Paper Company, Columbus, Ohio.

Karl S. Moening, Central Ohio Paper Company, Toledo, Ohio.

XUM

S. J. Hodgins, Central Topeka Paper Company, Topeka, Kan.
Fred F. Fox, Roger Carlin and F. E. Floyd, Crescent Paper Company, Indianapolis, Ind.
I. H. Reid and P. A. Stuhlreyer, Diem & Wing Paper Company, Cincinnati, Ohio.
B. C. Broderick, Dobler & Mudge, Baltimore, Md.
C. M. Howland and F. J. Weissinger, Dudley Paper Company, Lansing, Mich.
F. M. Duggan, Geo. J. Kuebel and J. R. Hauser, Durico Paper Company, Erie, Pa.
E. R. Carpenter, Dwight Brothers Paper Company, Grand Rapids, Mich.
T. H. Epes, Epes Fitzgerald Paper Company, Richmond, Va.
D. M. Woodward, John W. Graham, Spokane, Wash.
Geo. McKinney, A. E. Shaw, A. C. Thomas and W. H. Krone, F. A. Flinn, Inc., New York, N. Y.
T. C. Gregory, R. L. Greene Paper Company, Providence, R. I.
Fred Stutzman and Geo. W. Hoffman, Holland Paper Company, Buffalo, N. Y.
Wm. H. Howe, Buffalo Paper Company, Buffalo, N. Y.
Sydney T. Jones, John B. Binley and E. J. Cooper, Hudson Valley Paper Company, Albany, N. Y.
John H. Pott, Irwin Paper Company, Quincy, Ill.
Walter Johnston, Johnston Paper Company, Harrisburg, Pa.
E. V. Johnson and W. H. Lippmann, P. P. Kellogg & Co., Springfield, Mass.
Spencer Lathrop and Robert Lasher, Lasher & Lathrop, Inc., New York, N. Y.
John Leslie, John Leslie Paper Company, Minneapolis, Minn.
A. W. Green and W. H. Stuart, Henry Lindenmeyr & Sons, New York, N. Y.
C. E. Mack, Mack-Elliott Paper Company, St. Louis, Mo.
B. J. Megargee, Megargee Brothers, Scranton, Pa.
F. E. Morris, National Envelope Company, Waukegan, Ill.
Geo. A. Matthews, New Haven Paper Company, New Haven, Conn.
Robert S. Johnston, Old Dominion Paper Company, Norfolk, Va.
E. A. Petrequin, Petrequin Paper Company, Cleveland, Ohio.
T. R. Fort, Jr., The Thos. W. Price Company, Philadelphia, Pa.
W. A. Rhodes, S. P. Richards Company, Atlanta, Ga.
E. C. Mead, Richmond Paper Company, Richmond, Va.
A. P. Sherrill, James McCracken and J. K. Quinn, Riegel & Co., Inc., Philadelphia, Pa.
W. H. Rourke, Rourke Eno Paper Company, Hartford, Conn.
G. R. Likins, Springfield Paper Company, Springfield, Mo.
W. F. McQuillen and W. B. Stevenson, A. Storrs & Bement Company, Boston, Mass.
H. E. Pettersen and John D. Swigart, Swigart Paper Company, Chicago, Ill.
J. B. Thayer and James Logan, U. S. Envelope Co., Worcester, Mass.
J. D. Keating and R. T. McGuire, Troy Paper Company, Troy, N. Y.
J. Nacht, Union Card and Paper Company, New York, N. Y.
Charles L. Van Reed, Van Reed Paper Company, Reading, Pa.
Paul E. Vernon and A. C. Damon, Paul E. Vernon & Co., New York, N. Y.
George Ward, D. L. Ward Company, Philadelphia, Pa.
E. C. Johnston, Western Newspaper Union, New York, N. Y.
George S. Johnston, Western Paper Company, Omaha, Neb.
H. J. Keenan, Western Paper Company, Omaha, Neb.
George Matlock, Western Newspaper Union, Lincoln, Neb.
George R. Burkhardt, White & Wyckoff Mfg. Co., Holyoke, Mass.
H. E. Bush and A. H. Sampson, White & Wyckoff Mfg. Co., Holyoke, Mass.
Mark D. Wilson, R. D. Wilson Sons & Co., Clarksburg, W. Va.
H. L. Zellerbach Paper Company, San Francisco, Cal.
L. A. Colton, Zellerbach Paper Company, San Francisco, Cal.
L. D. Post, New York, N. Y.
A. A. Tanyaue, PAPER TRADE JOURNAL, New York City.
C. C. Walden Jr., New York City.

Machine for Imparting Linen Finish to Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 30, 1922.—The Paper Division of the Bureau of Foreign and Domestic Commerce is advised in a report received from Stuttgart, Germany, that some paper manufacturers in that district are using a machine which imparts a linen finish to paper as it is unwound from the roll. While this is not an entirely new method, it being used by some mills in this country, it may be an improvement over the machines now in use.

The general method in use in this country is to take the sheets of paper as they come from the cutters, inserting each sheet between zinc plates in books of about twenty-five sheets and a number of these books are run several times between steel rollers under heavy pressure until the necessary linen finish is imparted by the sheets of linen.

Although this is a more satisfactory method, and is necessary in order to produce the proper linen finish required on the higher grade paper, it is slow and expensive. It might, therefore, be to the advantage of some of our manufacturers making the lower grades, where price is the main factor, to use the method described in the consular report referred to. The Bureau has on file samples of paper produced under this method as well as blue prints of the machines described, and these will be exhibited to anyone interested upon application to the Bureau.

Vocational Education in the Pulp and Paper Industry

A partial list of the companies and organizations of manufacturers who have been inquiring from R. S. Kellogg, Secretary of the Joint Vocational Committee, for information regarding the program for vocational education in the Pulp and Paper Industry and the progress already made that would assist them in a similar work in their company or industry follows: American Institute of Meat Packers, Retail Shoemen's Institute, Corset Manufacturers' Association, Standard Oil Company of Indiana, American Seating Company.

A pamphlet is being prepared and will be published shortly, indicating avenues of construction that are available, and suggestions whereby it may be carried on in the industry. This pamphlet and that by J. C. Wright, Director of the Federal Board, will be available to all who make application. In the pamphlet by J. C. Wright is an introduction by R. B. Wolf on "What Education Is" and the "Analysis of Vocational Education in the Pulp and Paper Industry."

Some of the chapters are: "Occupations for Which Training Can and Should Be Given"; "Kinds of Training Agencies That Can Be Used"; "Analysis of the Principal Jobs in a news print mill, a sulphite mill, a sulphate mill, a book mill, a rag mill"; "Synopsis of Contents of the Volumes on Manufacture of Pulp and Paper."

Wages Paid in Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 30, 1922.—The Bureau of Labor Statistics, Department of Labor, has given out figures showing the employment and wages paid in 53 paper mills during the months of July, 1921, and July, 1922. According to these figures, there were 19,480 persons employed in 53 paper mills in July, 1921, increasing to 22,691 employed in the same factories in July, 1922, an increase of 16.5 per cent. The payrolls in these mills amounted to $475,635 in July, 1921, increasing to $522,726 in July, 1922, an increase of 9.9 per cent.

XUM

BOARD PRICES INCREASE IN PHILADELPHIA MARKET

Apprehension About Getting Supplies Because of the Railroad and Coal Strikes Stimulates Unusual Demand from Box Manufacturers—Most Other Lines of Paper Also Show Increased Activity—Prices Show Firmer Tendency With Some Increases—Huff Paper Co. to Incorporate—Scott Paper Co. Rushes Improvements to Its Plant at Chester Which Are to Cost About Half a Million Dollars.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 29, 1922.—Increase of orders for almost the entire line of papers, fine and coarse, such as usually is enjoyed only in the September revival of business after the lethargy of the Summer was the experience of the trade during this closing week of August. Its effect was heartening at a time when the distributors were apprehensive that the promise of peace in the railroad and mine labor disturbance was fatuous. These labor difficulties are assigned as the reason for the very great activity in box board. Because of the apprehension of the box makers, container producers, and corrugated consumers, that their deliveries might be cut down either through inability of the mills to produce because of coal shortage or inability to deliver because of freight tie-up they have been ordering very liberally, and indeed have been competing against each other for immediate shipments with the result that prices are almost bounding upwards. At the close of the week container was being quoted as high as $85 and $90. Boxboard in the neighborhood of $50 and straw board from $65 up. While the distributors would like to believe that the boom in this business is of a permanent character their better judgment is that it is transient in the main, and they are a little fearful that a reaction will ensue, although the optimisits are hopeful that by the time there is consumed the large quantities of raw material which the box and container makers now are stacking up, their business will have grown to such an extent that re-orders will be on the same generous scale they have been in recent weeks. The actual boom in the board situation has been the dominant factor in advancing quotations on the whole line of mixed and common papers and container stock used in their production. In this case, too, the packers are just a little bit concerned as to the future because the decided advances which have taken place in the last two weeks have enlisted the interests of the smaller dealers and particularly of the collectors, and while thus far there has not come into the market a supply equalling the mill demands, it is steadily growing and belief is entertained that in the near future it will reach such a volume as perhaps to cause the market to sag. However, there have been so many developments recently that have conflicted with expectations that there is nothing like conviction in the minds of the packers on this phase of the situation. While the lower grades are most lively in demand, mill inquiry during the week covered virtually the entire schedule. Hard whites, long a drug on the market, finally began to move, although not in large enough a volume as to cause prices to advance. Outside rates, however, now can be secured where before the inside prevailed. Soft white of the No. 1 quality moved upward during the week, as did writing papers and heavy books. Manilas and Krafts are all firmly held but without actual increase.

Increased Activity in Fine Papers

The week's development in the fine paper market was the very large increase both in inquiries and in orders from printers and advertising agencies for pamphlets and small catalogue uses. Coated, book, and cover papers were particularly active and prices while not actually advanced by the trade for goods from stock, are not made for future delivery because of the withdrawal by the mills of their price list. During the week the American Writing Paper Company, which makes so diversified a line, gave notice that its prices had been withdrawn. The distributors are not in the least apprehensive that the betterment which the week brought with it will not be continuous. It is true that the day-by-day experience of the trade is still rather variable, comparative quiet following perhaps but twenty-four hours after a real rush. However, comparison of week end with week beginning shows a very substantial gain with characteristics which convince the trade of its permanence. The coarse paper business still lags a little behind the fine paper, but it, too, is unquestionably moving upward, and prices are all staple, many very firm and a few increased.

Huff Paper Co. to Incorporate

The Huff Paper Company is to incorporate to manufacture and sell paper, paper bags, paper articles of commerce, paper specialties, twines and other kindred articles. The solicitors are Levi & Mandel. At the offices of the Huff Paper Company, in the Denkla Building, 11th and Market streets, where the prospective incorporators, Sherman L. Warren, Frank Hufnal and Henry L. Adler, are associated with C. D. Huff, head of the company, it was said that the firm is not yet ready to make an announcement, but that after the charter has been granted a statement will be made. The firm is one of the best known in the ranks of mill representatives and has the accounts for prominent paper bag and coarse paper manufacturers.

Scott Paper Co. Rushing Improvements

Work is being prosecuted vigorously on the half million dollars' worth of extensions and improvements to the plant at Chester, Pa., of the Scott Paper Company, with the purpose of completing them before the close of the year. A bulkhead of concrete for almost four hundred feet along the river front will facilitate the receipt of pulp from abroad and from New York and Baltimore and will expedite shipments of finished products. Save for one of the smaller units of the paper making plant the company, during the first half of 1922, operated at capacity, selling 233,500 cases of paper, establishing a high water mark. Net sales for the first half of the year were $1,373,192 and net profits $209,285.

New Paper for Carbon Manufacturers

Laboratory experiments, mill experience and tryout on the open market extending over a long period of time have now been completed by the William Mann Company, 6th and Market streets, the result being production at its paper mills in Lambertville, N. J., of a light weight, closely knit sheet used as a base for carbon paper manufacturers, and also for second sheets which realizes the firm's ideal of an American made product equalling or surpassing the imported. The new production is sold to plants manufacturing carbon paper and is also handled by the Mann Company, which has a particularly large trade among the railroads, unsettled conditions in the past having given it an exceptional opportunity for the perfecting of the new line. It is produced in rolls varying in sizes as low as 18 inches and running up to large sizes, but with the average in 26-inch rolls. The firm proposes, however, to place the product on the open market, and not as before exclusively with the railroads. Experiments have been going on in the laboratories at Lambertville for an extended period of time looking to the production of a domestic paper for stereotyping to compete with the imported article, but these have not yet been concluded.

General News of the Trade

The line of well known Lode Stone Cover Paper made by the Hampden Glazed Paper and Card Company, Holyoke, Mass., has

(*Continued on page* 58)

XUM

Buy Your Kraft Pulp Now

STORA
KORSNÄS
HUSUM

May We Quote?

A. J. PAGEL & CO., Inc.

347 Madison Avenue New York City

XUM

NATIONAL SAFETY COUNCIL MEETS IN DETROIT

Eleventh Annual Safety Congress Is the Most Largely Attended Since the Organization of the Safety Council in 1913—Paper and Pulp Section Is Well Represented at the Convention—Helpful Addresses by Men in the Paper and Pulp Industry Who Are Interested in Safety Work in the Mills—Some of Papers in Full

[FROM OUR REGULAR CORRESPONDENT]

DETROIT, Mich., August 30, 1922.—The Eleventh Annual Safety Congress of the National Safety Council convened at the Cass Technical High School, of this city, Monday, August 28, and will continue until Friday night. The convention has been a pronounced success thus far and the representation from the 4,000 member companies is the largest on record since the inception of the Safety Council in 1913. After the address of the president Monday morning, the first day's program was featured by talks by Edgar A. Guest and Judge C. L. Bartlett, both of Detroit.

The first participation of paper men in the program came Tuesday, when Ernest Augustus, editor of *Mead Co-operation*, Mead Pulp and Paper Company, Chillicothe, Ohio, delivered an interesting address on "Keeping Your Plant Paper from Going Stale," at the Editorial Problems Session. Following the reports of the chairman, secretary and various committees and the appointment of a nominating committee, the Paper and Pulp Section of the Safety Congress was given over to the following addresses: "Human Relations in Industry," by Fred H. Rindge, Jr., International committee, New York City; "The Goggle Problem in a Paper Mill," by Raymond A. Steffen, Champion Coated Paper Company, Hamilton, Ohio; "Safety in the Wood Room," by Frank A. Drumb, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.; "Uniform Accident Records for Paper Mills," discussion led by J. M. Sandel, National Safety Council, Chicago.

On the following morning, Wednesday, August 30, the report of the nominating committee was made and was followed by three speeches: "The Foreman and His Responsibility for Employees Under His Supervision," by Adam Wilkinson, labor commissioner, American Writing Paper Company, Holyoke, Mass.; "Accident Prevention from the Foreman's Viewpoint," by L. F. Knickerbocker, Kimberly-Clark Company, Neenah, Wis.; "Vocational Education as Related to the Industries," by F. Theodore Struck, assistant director of Industrial Education, State Department of Public Instruction, Harrisburg, Pa.

The scheduled address by Dr. Hugh P. Baker, secretary-treasurer, American Paper and Pulp Association, New York, was eliminated due to the fact that Dr. Baker did not return from Europe in time to make the trip West. The subject, "Accident Prevention From the Foreman's Viewpoint," which was formerly assigned to Edward Preville, of Kimberly-Clark Company, was taken over by L. F. Knickerbocker, of that company. Some of the addresses follow:

SAFETY IN THE WOOD ROOM*

BY FRANK A. DRUMB, CONSOLIDATED WATER POWER & PAPER CO., WISCONSIN RAPIDS, WIS.

With a never ending supply of logs being carried onto the saw docks, with saw carriages darting back and forth—up to the saws and back for a new mouthful—with the roar and the shriek of the huge saws as they cut the spruce and hemlock of our fast diminishing forests into short lengths of pulpwood, the safety man in a paper mill has a serious problem when he attempts to eliminate accidents in a wood room. Picture several mechanical splitters, both vertical and horizontal; greedy and treacherous hand barkers, belts, pulleys, conveyors, falling blocks and a hundred other hazards which exist in other departments of a paper mill; combine them into one little area and call it the wood room, and you have a good conception of a modern wood room from a safety standpoint. Unlike much machinery in the other parts of the mill the wood room machinery, to a large extent, cannot be guarded. Here, if anywhere in the mill, the individual must exercise the care which will prevent him from being hurt.

Hazards Lie With Individual Workmen

I believe that practically every modern mill is making every attempt possible to guard the machinery as well as it can. It has been our experience in the wood room that the principal hazards do not lie in the unguarded machinery, but rest with the individual workman. Thoroughly reliable men—men who do their work safely without any conscious effort of it, men who are old enough to realize that they are on the job for business, and who are not inclined to be joking with their partners while barking a block of wood, are the men we are trying to keep steadily in our wood room. There are so many machines which cannot be guarded that the matter of producing good safety records practically lies in the selection of the personnel. Careful men, who naturally do their work safely, will complete month after month with perfect safety records, while reckless men will shatter the attempts of the most conscientious safety men.

In our mill the department head is absolutely responsible for safety work. It is just as important that he protect his men from injury as it is that he turns out a certain number of cords of wood ready for the grinders and digesters. Certainly the department head should be the man most interested in the safety of his men. He is held to account for his production and if he wants to have good production records he must have good safety records. The two work hand in hand. This is possible through the nature of our organization. At the head of each department is a man of sufficient training and executive ability to understand that safety must be recognized in our plant. This department head is held absolutely responsible for accidents in his department, and it is not at all unusual for him to be in the mill manager's office explaining how an accident happened to occur.

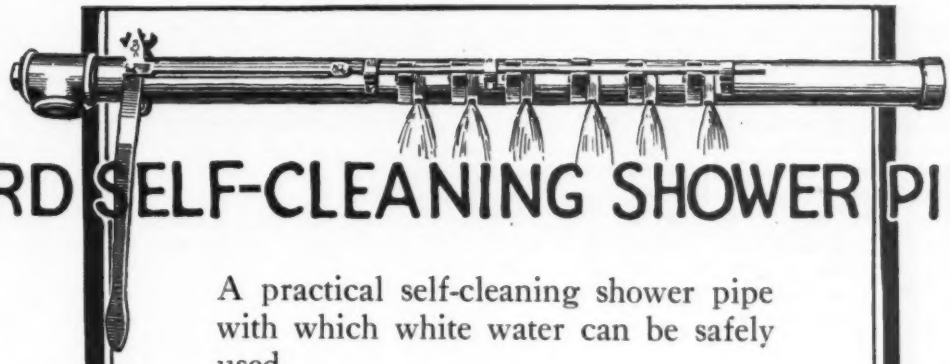
No Grandstand Work

While our safety department does some work directly with the men in helping to prevent accidents in all departments it also devotes a great deal of time to keeping the department superintendents in close touch with modern safe practices. There is nothing of the "grandstand" nature in our safety work. One of the principal slogans on our safety bulletins is, "Remember that no work in this mill is well done unless it is done safely." We make a very determined effort to impress upon every one that safety is just as much a part of their work as anything else they are instructed to do. The wood room superintendent takes the occasion very often to speak to individuals or groups of men in his department regarding safety—the same as he might about sorting the

*Read at meeting of Paper and Pulp Section National Safety Council, Detroit, Mich., August 28-September 1, 1922.

XUM

For Economy use them together



BIRD SELF-CLEANING SHOWER PIPE

A practical self-cleaning shower pipe with which white water can be safely used.

BIRD SAVE-ALL

A commonsense pulp saver.
A detector of leaks.
A practical white water filter.

Write for Details.

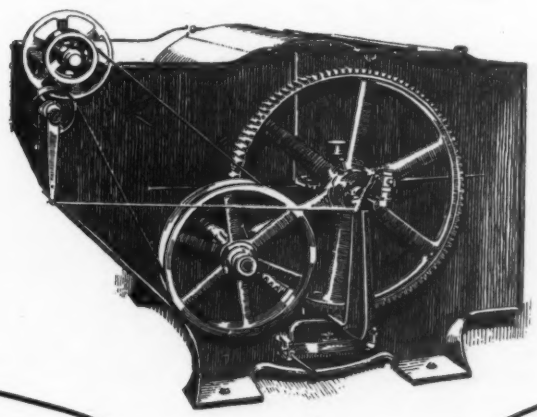
BIRD MACHINE COMPANY

South Walpole Massachusetts

Western Representative:
T. H. Savery, Jr., 1718 Republic Bldg., Chicago, Ill.

Canadian Builders of Bird Machinery:
Canadian Ingersoll-Rand Co., Ltd., 260 St. James St., Montreal, Canada.

88-233



BIRD SAVE-ALL

wood a little closer, keeping the department cleaned up a little better, or anything else connected with their routine work.

Under no circumstances would men in any department be given a red cap to wear should they all complete the month without an accident. I have read of this being done in factories and am frank to say that this would be in direct violation of our policy. We are making every effort we can to put safety on a stable basis—not a flag waving proposition—but a real flat footed man to man proposition that the men will take seriously. I do not believe that any serious minded man in our mill would appreciate wearing a red cap because he had completed a month with a perfect safety record. I wouldn't personally, I know, and I don't believe there are many men here who would. During the last two years we have also entirely eliminated safety rallies. Not with the idea that they were not educational to the men from a safety standpoint and that they brought the matter to the attention of their families as well, but with the idea that safety must be a direct and determined part of our mill policy, and like the other policies in the mill, must go to the men direct from their superintendent. It may take a little longer to put it over, and it may not, but when it does get over it will be so firmly fixed in their minds that they will connect it directly with their work and not with a pleasant evening they spent in strange surroundings where a few fellows put on a vaudeville act and a band played and they went home well pleased, but possibly too lightly impressed.

I am not under the impression that safety rallies or any other method of boosting safety is not all right, but personally I am very much in favor of getting away from theoretical methods of putting safety over in a plant and getting down to a practical basis. To illustrate what I mean in the matter of getting down to a practical basis I might say that in our plants a man who makes a safety suggestion which was considered unusually good and which was put into operation would be paid a cash bonus for that suggestion. If the suggestion was considered good but not good enough to warrant a cash payment, he would probably be written a letter by the safety director or by the mill manager, depending somewhat upon the way the suggestion came to the office. Copies of letters would be filed with this man's personal record and if in the course of a year or two he had made several suggestions he might get a cash bonus on the basis of several suggestions. It does not always result in cash bonus, but often has a very deciding effect in the matter of making promotions. A man who is making good suggestions right along is certainly considered to be more likely a candidate for a promotion than a man of equal ability who never makes a suggestion.

On the other hand if there is a man in the organization who appears to be having more accidents than necessary his department superintendent would invariably discuss the matter with him. If it appeared that he was not making any attempt to better himself the safety director or the mill manager would write him a letter calling his attention to the fact that only safe men are wanted for work in our plants. Where a man persistently takes chances there is no hesitation on the part of the management to discharge the offender.

Safety Work Starts with Mill Pond

Safety in our wood room starts at the mill pond and hot pond where the spruce and hemlock is unloaded from the cars or from storage for its first process in paper making—that of removing the bark. There are probably few jobs around the mill that are as dangerous as the work on the hot pond for here an accident is very apt to be serious. The best method with which I am familiar for unloading logs from the cars is through the use of safety car stakes which release the stakes from the side opposite which the cars are being unloaded. If the logs are being unloaded into the hot pond directly from the shipper it is probable that the railroad company's cars will not be equipped with safety stakes and the stakes must be chopped off. This is a dangerous job and only the most reliable must be permitted to work on the hot pond.

One of the very important things which should be impressed upon any crew of men working on the hot pond is that of watching their partner at all times. The safest way is probably to keep the crews as small as possible, and our experience has been that two men work together better than any other combination. We have found that two men can keep enough logs in the hot pond to keep a mill running which uses from 15 to 20 cords per hour. Due to the fact that this is especially dangerous work it is important to make the working conditions as safe as possible. See that tracks are kept clear of bark and that the footing is as good as it possibly can be. Safety at the point of unloading your logs is a thing which can be aided very materially by the railroad companies and the shippers. The fact that spikes should not be driven into logs coming to a paper mill should be very thoroughly impressed upon logging companies, and if all pulp wood shippers and consumers would combine their efforts to getting railway companies to equip their cars with safety stakes another great hazard might easily be eliminated.

Jack ladders to the saws are not dangerous nor are the conveyors if the men are made to understand clearly that the management will not stand for any attempts to ride them. Men often will take a chance and ride up a conveyor rather than walk if they think they can do so without the boss seeing them. It is absolutely understood in our mill that this is the direct route to the time check and we have no trouble. One method of discouraging the attempts to ride conveyors is to have good, substantial, well-guarded walkways up the inclines.

Circular Saws Cause Many Accidents

Circular saws, which cut the logs into the two-foot lengths, are responsible for a great many accidents which can vary from a slight cut to a fatality, depending on the nature of the accident. The hazard which most wood rooms guard against is the "kick back" or the danger of a block being thrown back from the saws and striking the operator. This is a hazard which is quite easy to guard against, however, and either a heavy meshed wire between the saws and the operator or a heavy wooden slat guard will protect the man operating the saws. Of the two guards I would say that the wire mesh was the most practical, as it will readily stop slivers of wood which might be thrown through a slat guard. For a time we experienced a good deal of trouble in handling saws which were being shipped and were unable to use hooks for this purpose due to the fact that our saws had to be slid flatways through conveyors and going up and down the stairs. Our wood room superintendent originated a guard which slips on right around the teeth of the saw; this serves not only as a safety guard but protects the teeth as well and saves a great many minor injuries due to the cuts on hands. One of the primary things to keep in mind in preventing injuries in the wood room is keeping your saws sharp at all times. Dull saws slow up production and endanger your men.

If a wood room is laid out so that the conveyors do not have to make any sharp angle turns the safety man is lucky, as clogged conveyors are dangerous. Some wood rooms, however, cannot be arranged to avoid some of these sharp turns and an occasional clog is bound to result. Short-handled pike poles are pretty handy to have at these places, and under no circumstances should men be permitted to kick out a clog. I can recall one particular instance of one of our safest men who had never been injured in a wood room. One day he saw a conveyor clog and thought that he could kick the block out and get away with it. The result was a badly pinched foot which was caught between two blocks and a disability for several days. If the wood is handled in the large rotary barking drums the chance for an accident is quite remote, as the only danger would be from an exposed gear on the drive or the chance

XUM

The Beloit Flat Screen

One that is in demand by a large number of Particular

MILLS

who realize its rigid construction, large suction area and dependability

BELOIT IRON WORKS
BELOIT, WISCONSIN

of a man falling into the drum, both of which can be guarded against. Where motor drives are used for the conveyors it is a very good plan to make a liberal use of emergency stop buttons, not only for the safety of your men but to stop the conveyors in case of a jam. In our wood room we have some of our conveyors tied together so that when one stops it throws the others out. We have found this very satisfactory.

This disc hand barker, however, is not so safe and many serious accidents have resulted from the use of these. Here, if anywhere in the wood room, the services of a careful and steady man is required. A moment's thoughtlessness can result in a very serious accident, and many wood room men carry scars which resulted from barking knives coming in contact with their hands. Flying particles of wood and bark make it a constant hazard for the eyes, and in many mills the men are required to wear goggles. We do not insist on the use of goggles for men working on our hand barkers because we feel that with the goggles becoming dusty and the perspiration running into a man's eyes he is more apt to have an accident with them than he is without. This is largely a matter of opinion, however, and I believe you would hear a good many expressions on both sides of the question right in this room.

Hand Splitters Impossible to Guard

The hand splitters are impossible to guard and accidents which result from a man getting his hand under them are very serious. The only preventative is a careful man who is constantly watching his work. It is a very poor plan to have his work so that he must look around behind him, as our experience has been that the accidents which did occur on our hand barkers were due to a man turning around to throw a piece of wood to his rear, and in so doing left the other hand lying on the block. Turning his body pulled the other hand around under the knife. We have been fortunate in not having any real serious accidents on our hand barkers or hand splitters. We have found that is is a pretty good plan to have it understood among the splitter and bark workmen that under no circumstances should they talk to another man or engage in any conversation during their work. To do their work safely their attention must be continually on the machine that they are operating.

If all machinery could be installed new a great many safety problems would be solved before they became problems, but unfortunately many places which were erected with no thought of safety must be guarded now that the industrial world has come to the realization that accidents do not pay. Chippers which cut the blocks up for the digesters are mighty dangerous pieces of machinery, but when they are installed below the floor level with a long spout leading to the knives, they become comparatively safe. Sharp knives on your chippers make things safer and they keep up the production in the wood room, in addition to giving the digesters good, clean-cut chips. Men who are engaged in changing the chipper knives must be absolutely reliable, and must learn to keep all bolts, bearings, and other adjustments in repair. Have your chippers inspected often and train your men to inspect the disc for cracks twice daily while changing knives. It is a very good plan to have an emergency stop button placed where the operator can reach it and stop the chipper instantly.

General Health Must Be Considered

Safety in the wood room not only affects the man from the dangers of being hurt on a piece of machinery but the general health of the men must be considered as well. Rotary chip screens which roll the chips over and over in the process of sorting throw out a considerable dust. Dust breathed day after day by the workmen will settle in their lungs and irritate them. A cover over this screen is a good protection against the dust, and a blower or suction which removes the dust entirely will keep the air in this department much clearer. One of the first cases of industrial disease for which compensation was allowed by the Wisconsin Industrial Commission occurred recently when a grinderman proved to the satisfaction of the Commission that he had contracted tuberculosis while working in the grinder room. Healthy men will give a better day's work than will a man who is breathing air which is laden with dust particles. If you are not worried over the health of your men you are certainly looking for the maximum in production and to get it you must offer healthy conditions.

The hazards in the wood room are either multiplied or diminished very materially by the general conditions under which the plant is being run. It happens that in our mill our sulphite is not bleached, which means that the hemlock wood must be sorted very carefully and every particle of bark removed before it goes to the grinders. Here enters a very material source of accidents which does not exist if the wood is simply routed through the barking drums and is sent to the digesters and grinders with more or less bark still attached to it. With the careful sorting the hand barkers and hand splitters come into play and it is here that men are very easily injured. Piles of rotten wood which cannot always be cleared away during the working shift while the usable grade of chips is being run through the screens increases the hazard. The general run of wood and the condition in which it comes into the wood room also varies the situation to some extent. Wood which has soaked in the water for a long period and comes to the wood room with the bark fairly falling off it presents a much smaller hazard than does the greener wood which barks quite hard.

Psyschological Factors

We know in our mill that the general appearance of the mill will have a marked effect on the frame of mind in which a man will be while working in the department. While it will not absolutely affect all men, we believe that a neat appearing, well swept wood room will stimulate the work a man does, and certainly a well-kept place materially cuts down the tripping and falling hazard. In your wood room, above all things, proper arrangement should be made for good ventilation and drainage. Considerable water will drain from the barking drums and the conveyors, and with the water properly taken care of, it does not run all over the floor, offering slipping and falling hazards as well as a very disagreeable and unhealthy odor in the wood room. We make an effort to keep all departments of the mill clean at all times, not only because we are proud of the institution in which we work and wish to have our men feel the same way about it, but because we feel that a man works with a cleaner, freer mind in a clean place. Old portion of worn-out conveyor chains, sprockets, belts, and other odds and ends are kept in better shape and are a good deal easier to find if kept in a small auxiliary store room within your wood room.

In the average wood room a general use is made of pike poles and picaroons. The best quality of picaroons will be found to be none too good for handling your wood during the winter months when the blocks are frozen. They will retain their points and instead of bouncing off the wood and hitting the operator when they are struck against the block, they will drive into the block. During the winter months when frozen wood is being handled, men must be careful in handling the wood, and in spite of all care you will probably experience accidents in which men bruise their hands and feet. We have found it advisable to keep these tools sharpened up in good shape all the time, and believe it advisable to have an emery wheel handy to the work. In grinding on an emery wheel there is always the hazard of injury to the eyes, but by hanging a pair of goggles where they are in the way if not on the operator's eyes it does not take very long to get the men used to them. We have found the idea of writing a short letter to the foreman calling his attention to the fact that we saw one of his men grinding without using the goggles a very practical way to eliminate this habit. By naming the man who was grinding without them the foreman can go directly to him and find the reason why he did not wear the

XUM

FOR QUALITY PAPERS USE

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

Borregaard **Norway**

SOLE AGENTS FOR U. S.

J. Andersen & Co.

21 East 40th Street **New York, N. Y.**

WAYAGAMACK

KRAFT PULP

Uniform in Quality
Essential for Strength Requirement

The Pulp and Paper Trading Company

21 East 40th St., New York, N. Y.

Sole Agents for United States for

CANADIAN KRAFT, Ltd. **Three Rivers, Canada**

goggles. It then shows the men that they are not only being checked up by the safety department on these matters but their foremen as well are being kept in touch with their carelessness. The foreman realizes that the safety rules are going to be enforced, and very little trouble is experienced.

Electrical Hazards Same as Elsewhere in Mill

Electrical hazards in the wood room are probably about the same as they are in every other department of the mill. It is a very good plan to have all men understand thoroughly that unless they understand the electrical equipment they should not attempt to start the machinery. The use of "Hold Cards" on all starters when the men are working on them is imperative if any pretense is being made to operate safely, and even then if the men are not careful accidents can happen. "Hold Cards" should be put through the padlock holes on the square "D" switch when the switch is in the closed position in order to be sure to prevent accidents. If this is not done a man can throw the switch into starting position without seeing the "Hold Card." I can recall an instance where a man went down to place a "Hold Card" on a pump. Seeing that the electricians already had one there, he went back to his work, which was fitting a pipe. A short time later the electrician completed his work and came back to the starter, starting the pump. The pipefitter heard a roar in the pipe and lookind in to see what was going on. Just at that time the water came through and he and his helper got a good bath, as well as a lesson about putting their own "Hold Cards" on a starter.

Runways should be placed over conveyors at convenient places which will discourage the practice of climbing over the conveyors while they are moving. Provide at any cost safe passages, guards and runways for your oilers, so that all machinery may be oiled quickly and safely while running. Such safeguards will eliminate accidents and will prevent burned-out bearings and frequent shutdowns by giving oilers an incentive to inspect their machinery often.

Use of Bulletin Board

In our wood room, as well as in our other departments of the mill, we have a bulletin board which indicates daily the number of days each department has run without a lost-time injury. This bulletin board is used for posting of safety bulletins or any other information which we wish to get to the men. We use the National Safety Council Bulletins very liberally, but also have a bulletin system of our own which we believe has been quite successful. Through a press bureau, we receive daily clipping service on all accidents which have occurred throughout the State. These are clippings out of newspapers. We take these clippings and with the use of a brush do some larger lettering and post them on the boards. We have found the men are very much interested in these clippings and believe that they keep the matter of safety constantly before the men in an interesting way. Departmental safety cards posted in the departments show at the end of each month how many accident have occurred in that department. At the end of the month the mill manager writes each department superintendent a letter reviewing all accidents in his department during the month and commenting on any safety work which has been done. Very often suggestions are made as to how some of these accidents might have been prevented.

Through this campaign for safety in our plant we have aroused a good deal of interest in the department superintendents, and at their meetings safety is very often quite generally discussed. The department superintendents have found it an interesting subject, and from them we have received some of our best safety suggestions. We have an occasional mill inspection for safety and encourage suggestions at any time from the men about the plant.

THE FOREMAN'S RESPONSIBILITY FOR EMPLOYEES*

By Adam Wilkinson, Labor Commissioner, American Writing Paper Company

Much has been said about the foreman's responsibility for the safety of employees under his supervision. The strategic position occupied by the foreman in the paper industry makes it possible for him to exercise a great deal of influence in the field of accident prevention.

It is not too much to say, however, that the management generally in years gone by has not expected the foreman to assume any great amount of responsibility for the safety of employees in his department. To maintain a uniform output of standard product has in most cases been the chief function of the foreman, and when this was secured his services were generally considered satisfactory.

Growth of Safety Movement

The safety movement is comparatively new, as is evidenced by the fact that this is the eleventh annual safety conference of the National Safety Council. Whatever great accomplishments have been made in this brief period of time have merely taken us from the field of propaganda into the field of practical accomplishments. In the paper-making industry it requires a long term of service before men are promoted to the position of foreman, and it is safe to say that the majority of men occupying these positions today have done so for more than a decade past, and before the days when the term "Safety First" had any real meaning.

It is unfortunate, but nevertheless true, that many of our foremen today regard the safety movement as propaganda and when men regard this work as such they naturally feel that they have performed their full duty when a uniform output of standard product is maintained in their department.

*Read at meeting of Paper and Pulp Section, National Safety Council, Detroit, Mich., August 28-September 1, 1922.

What I have said heretofore is largely a review of the conditions that have governed the foreman in the past, and to assume a critical attitude of the things that have been done or the things we fail to do will get us nowhere in our endeavors to prevent industrial accidents.

Securing Co-operation

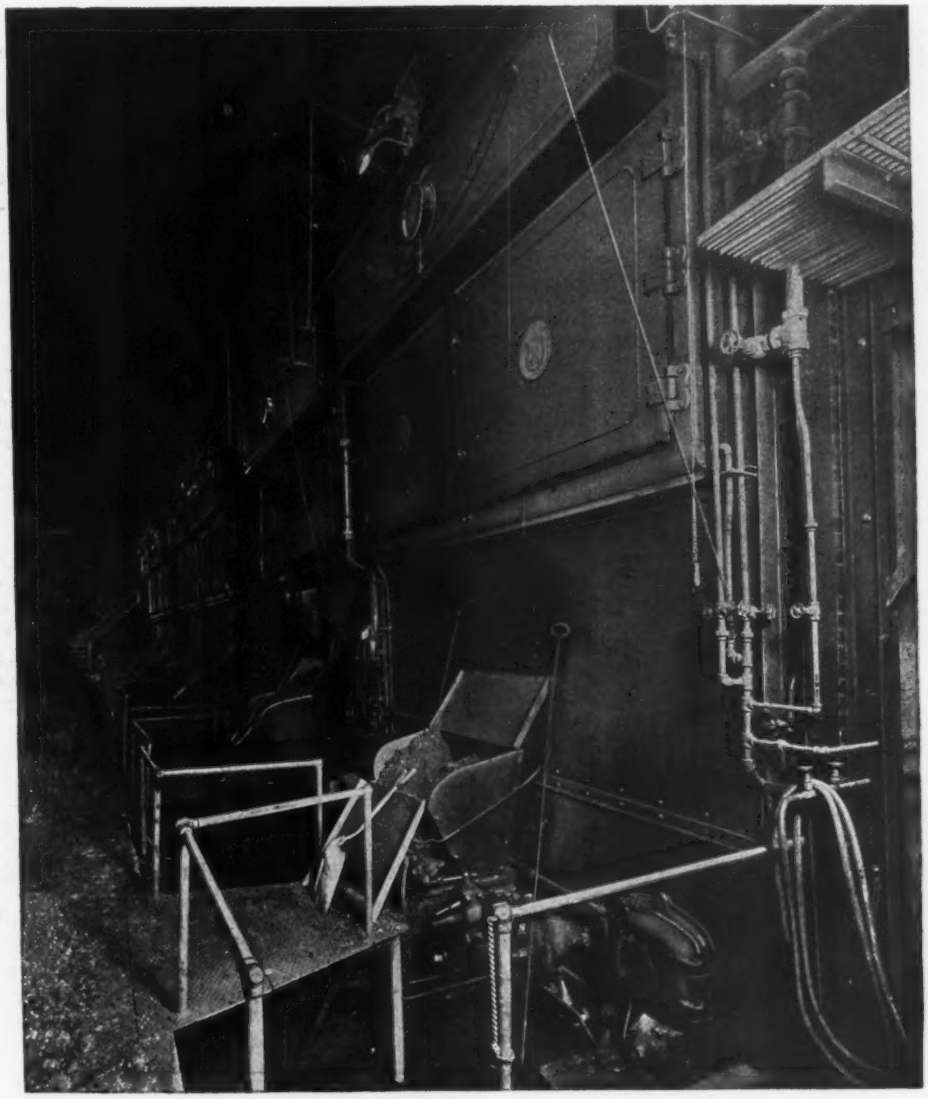
Recognizing as we do the important part the foreman plays in accident prevention it becomes necessary for the person who directs safety work to maintain a close personal contact with the foreman. The interest displayed by the foreman will largely be reflected by the attitude of the employees under his supervision. To overlook the foreman in any plan for safety work will result in much wasted effort. The foreman is the leader in his department, and no movement will advance very far without leadership. To make the foreman a leader in the safety movement should be one of the chief aims of the safety director. To bring the foreman to a full realization of his responsibility for the safety of the employees under his supervision he must realize that any effort made to prevent accidents is not a side line, but one of his chief duties.

A Simple Safety Formula

Our safety creed for the foreman should be:

1. The foreman should see that every employee is properly instructed how to do his work in a safe manner.
2. The foreman should maintain discipline in his department, and prevent "horseplay" on the part of employees.
3. The foreman should advise the superintendent of any unsafe condition that exists in his department.
4. The foreman should be as much interested in the safety of the employees as he is in the quality of the product of his department.

XUM



26,000 hp. *from these boilers*

THESE six 550-b.hp. H-Type HEINE Boilers supply steam to turbo-generators of 13,500-kw. capacity, plus 45 per cent. for process heating.

HEINE Boilers have made a name for themselves in ability to carry heavy loads and pick up their load rapidly. Many of the most modern power plants are equipped with HEINE Boilers because of their performance under actual service conditions.

Heine Boiler Company
SAINT LOUIS U.S.A.

3036

KEEPING PLANT PAPER FROM GOING STALE*

By Ernest Augustus, Editor "Mead Co-Operation" Mead Pulp & Paper Co., Chillicothe, Ohio

The primary purpose of any plant paper is to foster a spirit of good-will and co-operation between the employees of the plant and the management or executive end of the business. To accomplish the greatest possible good and to carry out this purpose, one of the first essentials is, that the paper be read by all the workers in the plant. In order that this may be the case it is necessary that the publication be so edited that it is looked forward to and read with a great deal of interest by the greater proportion of the employees. Unless this happens to be the case there is evidently something wrong with the publication, and nine chances out of ten, the underlying cause can be attributed directly to staleness.

The live wide-awake editor of any successful plant paper will be constantly on the look-out for new ideas which he can incorporate in his publication and thus prevent its growing stale. He will also be continually on the alert for any signs of staleness and will employ various methods in keeping his paper fresh and up-to-date.

What I shall say is based largely upon my own experience in getting out and editing "Mead Co-Operation"—a 48-page magazine style, plant publication; issued monthly to its employees by the Mead Pulp & Paper Co., Chillicothe, O.

Inasmuch as all of my experience has had to do with the more commonly known magazine-style publication, what I shall say will apply particularly to this form of plant paper. Much of what I shall try to bring out, however, may be equally as well applied to the less-commonly seen newspaper-style publication.

Determine A Policy

Without question, the first essential to be considered in editing any worth-while and successful industrial paper, is to determine upon a definite plant policy in the very beginning. The sooner this is done the sooner is the success of the paper assured, and the more unlikely is it to become stale. Determine definitely upon your policy and then strictly adhere to it.

One a policy has been adopted, everything published in the magazine should bear a positive and clearly understood relationship to that policy. Nothing should be permitted to appear in the printed pages which cannot be linked up in some manner with this policy.

The next most important thing, in my estimation, in keeping a plant paper from going stale, is the matter of its general attractiveness and the appeal made by it to the esthetic tastes of those working in the plant. Unless it is attractive and made up in such a way that it makes an appeal to the sense of beauty, it is very likely to grow stale sooner or later.

First impressions are generally the most lasting and for this reason it is very important that the matter of a cover be given considerable thought and attention. An attractive and constantly changing series of covers is one of the best ways to overcome the possibility of staleness from this standpoint.

Selecting The Cover

In determining upon your covers, choose subjects and designs which are attractive and which will arouse the reader's attention and interest immediately upon his seeing it; and which will arouse in him a desire to investigate further and determine for himself if the inside is as good as the cover would lead him to believe. Usually, if the cover is attractive and different each issue, and printed in more than one color on a good quality cover stock, the worker's interest is maintained and he naturally expects to find something worth while and of interest to him on the inside. In this way he is instinctively led to investigate further and you are more than likely to put across your message and have your publication read.

Seasonal covers, of a photographic or wash-drawing nature, are considered by the writer to be the most attractive and to carry with them the greatest appeal and there is no end of such subjects which any editor can very readily procure at small expense. Pictures of familiar and nearby-by landscapes and things generally known by the majority of the workers are especially appropriate.

In the case of purely photographic covers, with little or no art-work involved, it is not necessary that more than one color ink be used in the printing, to make the cover attractive, provided you get away from the conventional black and white. One color can be used very effectively, provided you secure the expert advice of a first-class printer in making your choice of color. Change the color as frequently as possible and occasionally use more than one color to add variety and to hold the interest of the reader. A good editor, with a little bit of study on this subject, can very readily keep his covers attractive and changing without having to expend any great sum of money in so doing.

Use Good Quality Paper

Regardless of what the cover subject is to be, make sure that it is printed on a good quality paper. Nothing so cheapens the appearance and attractiveness of any publication as a poor grade of paper. This point applies equally as well to the whole magazine as to the cover alone. Unless the magazine is printed on good paper, in clear, uniform and easy-to-read type, with all halftones and line drawings standing out clearly and distinctly, a certain proportion of the appeal is bound to be lost. If a poor paper has been used; if there is a variety in the size and style of type, and if illustrations and drawings are mottled and indistinct, there is certain to be a lack of interest on the part of those to whom the publication is issued; and sooner or later this lack of interest is going to develop into staleness.

While on the subject of illustrations, do not overlook the fact that a plentiful scattering of pictures and drawings all through the printed pages will accomplish a great deal in helping to keep the paper fresh and of interest to all. Be generous in their use if you would have your paper read with interest by the largest number and accomplish the best results. Through the liberal use of illustrations the reader is unconsciously led to read much which otherwise he might pass by.

Illustrating The House Organ

Everybody likes to look at pictures, and especially is this true when they are of persons, places and things of whom or which the reader knows something about. There is an inborn liking in all of us for pictures, which has come down through the ages. The first written language was a picture language, and even today it is a very popular way of telling a story. It has been truthfully said that more can be told in one picture than might be said with a thousand words. For this reason illustrations are one of the best mediums which can be employed in putting across your message and keeping your plant paper fresh and of interest to all. A questionnaire recently sent out in our plant disclosed the fact that seventy per cent of our readers demanded more pictures, although we were already using a considerable number in each issue.

Cartoons are also of considerable value in holding interest and attention, particularly when well drawn and when they portray some humorous incident or happening which has taken place in the plant, or which has some direct bearing on an individual or group of individuals in the plant. Do not use too many cartoons,

* Read at Editorial Problems Section of National Safety Council, Detroit, Mich., August 28-September 1, 1922.

XUM

FARREL
REG. U.S. PAT. OFF.

Paper Mill Bulletin No. 2

In the Paper Industry

Farrel Calenders
Farrel Rolls
and
Farrel Roll Grinders

—have always received preference wherever the reputation of a Paper Mill depends upon high quality of product.

DO you find that your Rolls can be reground accurately enough to satisfy you on any but a Farrel Roll Grinder?

We ourselves, in the business of making and grinding rolls, were obliged to devise and develop the Farrel Grinder in order to secure the unfailing precision which distinguishes all Farrel Rolls.

The reputation of your product demands this Farrel-ground precision in your Rolls. Put a Farrel grinder in your plant.

FARREL
Established 1848
FOUNDRY & MACHINE COMPANY
ANSONIA, CONN.
Branch Office
802 Swetland Bldg., Cleveland, Ohio
Branch Plant
Buffalo, N.Y.

XUM

however, unless they are fairly well drawn—preferably by an artist in the plant or by someone generally known to the majority of the workers—and unless they picture some happening generally known about by more than a comparatively limited number of the employees.

Only very rarely do we find an editor who experiences any difficulty in getting pictures and cartoons for his publication, once he has started the practice of using them generously and making it generally known to the workers that he wants them. Quite to the contrary, he frequently finds himself receiving more pictures from the employees than he can use. The same is true regarding subjects for good cartoons. If once educated to the habit, the men in the shop will find no end of things which can be pictured in cartoon, and the average editor will experience some difficulty in choosing what to use and what not to use.

News in Photo Form

By arming himself with a Graflex or any good camera, the editor can find hundreds of subjects to "shoot" which will prove of interest to his readers. I have made it a practice to take frequent trips through the plant, carrying along a Graflex, and in this way many excellent ideas have been suggested for photographs and at the same time I have collected a great deal of real news which is used to good advatnage later on in the magazine.

Do not be too choicy in making your selection of photographs. What to you may seem of little interest, to some of your readers may mean a great deal—especially if it is a picture of someone or something in whom or which they are interested, or which they know about in a general way. Pictures of employees, their families and children, their homes, vacation trips, fishing parties, plant outings, unusual pieces of machinery and equipment about the plant, men at work in the shop, etc., are particularly appropriate and should be used whenever the opportunity presents itself. Other pictures of a more or less general nature are also appropriate and should be used whenever possible.

Making The Paper "Newsy"

Next after the importance of attractive covers and a generous scattering of illustrations through the printed pages, in maintaining the interest of the average plant worker, comes the matter of news. By news I mean the printed matter which is intended to convey the message to the worker and for which the paper is issued. Unless the message intended for him, and the policies of the company, are put across in the form of news it is very doubtful whether the plant paper is accomplishing any real good whatever, outside of merely entertaining.

Like illustrations, everybody is interested in news. This is true because news tells us something. News is of two kinds. It either tells something that has happened or something that is going to happen, and this is of double interest to the worker when the particular thing or happening concerns himself and his fellow-workers, or the plans and policies of the plant in which he is employed.

There are few sermons indeed which cannot be preached as a news story. Bear this in mind as you prepare your copy for each issue, and instead of employing the stilted and preaching attitude, get into the habit of writing your copy in that simple, easy-going, breezy newspaper style. Instead of making blunt assertions and stating cold facts, learn to recognize the news value of a story or an editorial and then write it up from the standpoint of news. The sooner you are able to recognize what is news and write it as a news story, the sooner is your plant paper going to win the hearty support of the workers, and the longer is it going to take for that paper to grow stale.

The Editorial Message

In this same connection it might be well to give a word of caution about editorials. Do not depend upon putting across your message through the editorial route entirely. Be sparing in their use and make sure that all editorial matter carries with it some news value. Make sure also that each editorial bears some clearly understood relationship to the policies of the company. The timeliness of editorials should be readily recognized and understood, and particularly so when of the scissors and paste-pot variety. Keep your eyes and ears open and take advantage of every opportunity which presents itself for getting a good story. A good story of the right kind will accomplish worlds more good than a poorly handled editorial.

An excellent way to acquaint yourself with what the workers really like to find in their paper is by way of the questionnaire method. In this way, so I have found from personal experience, the editor can really find out what the workers in the plant want and what they like best. In our plant, somewhat less than a year ago, we sent out a questionnaire containing sixty-six questions. More than fifty per cent of our employees answerd this list of questions, and the information and enlightenment which we obtained from the tabulated replies to this questionnaire would furnish material for an excellent paper on this subject alone. Time does not permit of my mentioning it further now, however.

Personal Contact With Employees

Another equally effective method of keeping in touch with your readers and learning what they want in their paper—probably productive of even better results—is for the editor to personally acquaint himself with as many employees in the plant as possible. Take advantage of every opportunity and spare minute afforded you to get out in the plant and talk personally to the men. Find out from them what they like and what they dislike. Try to discover if there is anything in your paper which they particularly dislike and in which they are not interested. After you have made your discoveries try to give them more of what they like and less of that which they dislike. Unless you can find some other means of overcoming the objectionable and little-read features, discontinue that feature entirely. Such things breed staleness and lack of interest and enthusiasm. Avoid them as much as possible. Give your workers what they want and you will have no difficulties in holding their interest.

Do not get the mistaken impression that the average plant worker wants to read only the light, humorous stuff, giving no thought whatever to the more serious things of life. Such is not the case, or such was not the case in our plant as revealed by answers received to the questionnaire sent out. The replies to this questionnaire showed to our surprise, that special articles of a business nature carried the greatest appeal, with plant gossip, jokes and funny happenings coming second on the list. Stories by and about company officials and executives were also shown to have a wide appeal. This illustrates the point that the average worker appreciates something of a more worth-while nature. Therefore, instead of using your own judgment about what most interests your readers, find out from the readers themselves and then you cannot go wrong.

Be Brief And To The Point

One very important point to be considered in this respect, regardless of the general nature of your subjects, is that all articles should be short and to the point, without being blunt and abrupt. A sure way to breed lack of interest and staleness is to fill up the pages of your paper with long rambling articles. The average reader does not like to read long discourses on any subject and it is therefore important that you keep your articles down to short lengths—preferably not more than one or two pages, and shorter if at all possible. If the reader can see at a glance that an article is short he will more than likely read it; whereas, if it is long he will pass it by for the time being, intending to come back at some later time and read it. Nine chances out of ten he forgets about it entirely and eventually the paper is cast aside without the article having been read at all.

XUM

THE MINERS ARE STILL OUT

Winter will soon be here and it is going to make a difference this year how much steam you are going to use to heat and ventilate your mill.

When the mill begins to drip and you think someone has taken the heads off your boilers is no time to wish your ventilation was better or took less steam.

We have remodelled twenty-six systems so far this year—they are ready for winter—ARE YOU?

ROSS SYSTEM IN BOARD MILL
RIVER RAISIN PAPER CO., MONROE, MICHIGAN

No obligation to get our recommendations. Anything from a SHEET-IRON VENTILATOR to a COMPLETE SYSTEM

Ask your friends about us

J. O. ROSS ENGINEERING CORP.

549 W. Washington Blvd.
Chicago, Ill.

30 East 42nd Street
New York City

79 Milk Street
Boston

Mention has already been made of resorting to the scissors and paste pot method in regard to editorials. The same holds good all the way through the publication. It is not advisable to resort too frequently to the scissors and paste pot if you want your paper to be original and accomplish the greatest good. Clipped material cannot carry with it the same appeal as that made by original copy coming from someone within the organization or someone generally known and respected by the workers in the shop. Too much reprint from other publications, with not enough local news and original material is sure to lead to the thing we most wish to avoid—staleness.

Use Names

The frequent use of names all through the printed pages is another excellent way in which to maintain interest of the worker. A plant paper filled with live news of the plant, of employees, their activities and their interests, is a paper in which not only the man of the shop finds an interest but those at home and outside of the plant are likewise interested. The best way to convey this news and to maintain this interest is through the use of names as frequently as possible.

An industrial magazine is only another form of the once popular country weekly, which everybody perused with intense interest to learn of the happenings of the week. Every newspaper man realizes the importance of using names. Every cub reporter has had the experience of having the editor impress this fact indelibly upon his mind. Get a man's name into any publication and you have made that magazine, newspaper, sheet or leaflet of greater interest and importance to that man, says one writer on the subject of Shop Publicity.

In determining upon your make-up and contents for each issue make sure that you have a careful balance of material so that an appeal is made in some portion of your paper to each of the various classes of workers. Overlook no one. Have something of interest in it for every employee in the plant.

As previously stated, the average worker likes something in addition to the purely light reading matter. There are some, however, who do not care for the heavy stuff, and for these the editor must provide something in its stead so that that worker's interest is held. Eventually, by using the proper methods, this class of worker may be gradually trained and educated to appreciate the more worth-while things. Unless something is provided for him during the interim, however, his interest is lost entirely and your paper has begun to grow stale in his mind and through his influence others may be led to think likewise. Therefore make sure that you have a carefully chosen balance in make-up, in order that it may appeal to all employees in the plant.

Avoid the mention of salaried officials and the "white collared guys from the office" too frequently. It is an inherent tendency for the worker in the plant to look with more or less contempt upon the office-worker, and too frequent mention of this class in the pages of your paper will help to strengthen this feeling of dislike in the minds of the shop workers. Divide the space devoted to each in proportion to the numbers of each employed in the plant, giving the advantage to the shop worker.

Variety In The Make-Up

Still another thing to be avoided is the use of too many standard page and departmental headings. Change your headings frequently so that the reader does not become accustomed to seeing the same thing each time he reads over a new issue of the paper. Avoid placing all heavy material in one particular portion and all light stuff in another. Mix them up and intersperse the light with the heavy. Get away from the habit, also, of placing the various departmental and standard subjects on the same page each issue.

The more readers you have the more likely is your plant paper to accomplish the purposes for which it is striving. Obtain the good will and confidence of the wife and the other members of the household and you are pretty sure to experience no difficulty in reaching the right spot with the husband, the father, the brother or the sister. Therefore, if you would have your plant paper accomplish the greatest possible good, make sure that it reaches the homes of the workers where all members of the household may enjoy the privilege of reading through its pages and living in the atmosphere of the plant.

This concludes what, in my estimation, are the more important things to be considered in getting out a successful employees' publication and in keeping it from going stale. Be wide awake and keep your eyes open and you will have little difficulty in discovering the things that tend to weaken the effectiveness of your paper and cause it to grow stale.

Tidewater Paper Mill Sold

The Tidewater Paper Mill, located at Bush Terminal, Brooklyn, has been sold as of July 1, 1922, by the *New York Times* Company to a syndicate composed of Perkins-Goodwin Company and Acer Paper Sales Company, Inc.

Negotiations for the transfer of this property have been in progress for some months and were consummated on Saturday, August 19, when papers were signed by Adolph S. Ochs, president of the *New York Times* Company.

This mill, formerly owned by the North American Pulp and Paper Companies, was sold to the *New York Times* in 1917 through the instrumentality of Perkins-Goodwin Company and has been operated by the *New York Times* Company for the past five years for their own account.

This mill was purchased by the *New York Times* Company in anticipation of the time when deliveries of news print paper in New York City would be more or less irregular owing to war conditions.

The Tidewater Paper Mill is turning out over 30,000 tons of standard news print paper per annum, and the quantity which has been for sale to outsiders, while the mill was owned by the *New York Times* Company, has, in the past five years, been placed through the instrumentality of the new owners and with their customers, and the transfer of the mill is a guarantee to these customers of a continuance of their paper supply. In addition to this, the new owners will be glad to help out some of their other friends by supplying them with paper, which they have been desirous of doing for some time.

The active management of the mill will be under the direct control of John D. Coffiin, vice-president of Acer Paper Sales Co., Inc., who was instrumental in placing the mill on its high standard of efficiency at the time it was purchased by the *New York Times* Company, and Arthur F. Allen will continue as manager of manufacturing.

The financing of the new proposition will be in charge of F. W. Westlake, vice-president and treasurer of Perkins-Goodwin Company.

The sale of paper will be under the care of C. T. Rue, of Perkins-Goodwin Company, who, incidentally, will be vice-president and manager of sales of the new company.

The officers of the new company, to be formed and called the Tidewater Paper Mills Sales Corporation, which will be the holding company for this property, are:

President, J. D. Coffin, vice-president of Acer & Co., Inc.

Vice-president and sales manager, C. T. Rue, manager news print paper department, Perkins-Goodwin Company.

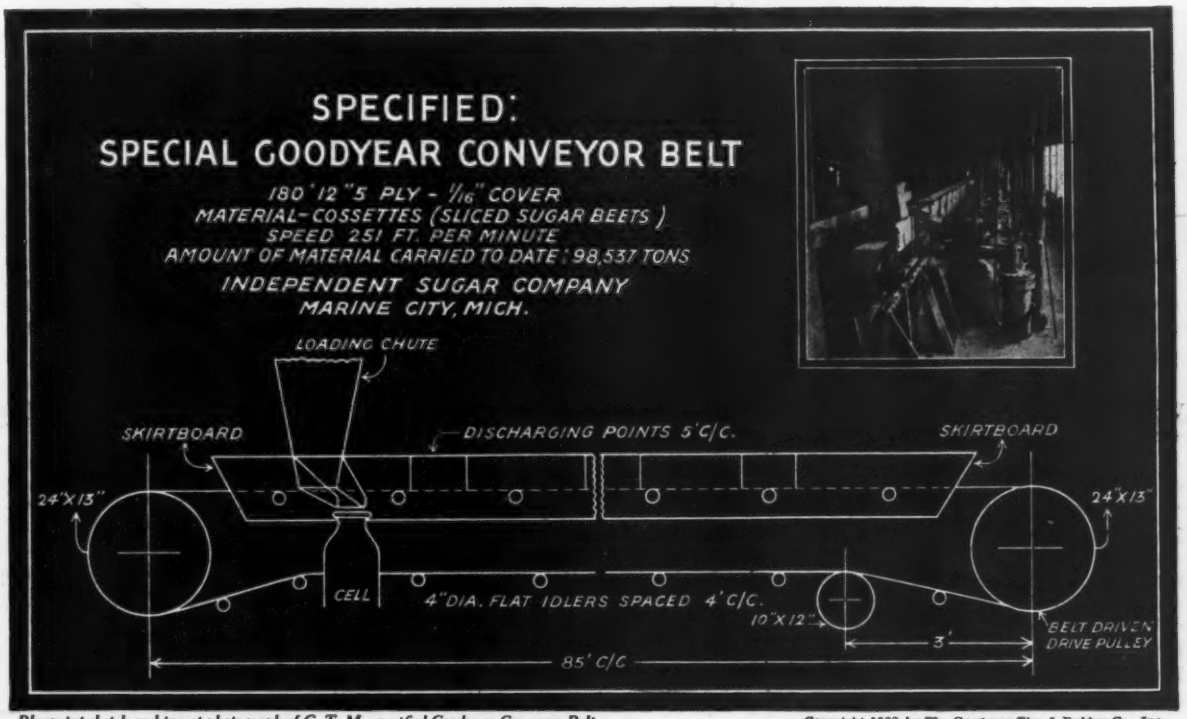
Secretary, E. S. Pincott, of J. H. A. Acer & Co., Ltd., Montreal.

Treasurer, F. W. Westlake, vice-president and treasurer, Perkins-Goodwin Company.

Chairman of the board, J. H. A. Acer, president of J. H. A. Acer & Co., Ltd., Montreal.

The foregoing, together with Louis Calder, president of Perkins-Goodwin Company, constitute the board of directors of the new company.

XUM



Blueprint sketch and insert photograph of G. T. M. specified Goodyear Conveyor Belt in service in the plant of The Independent Sugar Company, Marine City, Michigan

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

The Sugar-Beet Acids—and the G. T. M.

"This is the belt we were looking for from the day we opened the plant," said the Superintendent of the Independent Sugar Company, Marine City, Michigan. He was referring to the Goodyear Conveyor Belt specified by the G. T. M. —Goodyear Technical Man—after an expert analysis of the Company's service requirements.

"It satisfies us thoroughly," is the final verdict. "It has served through two successful campaigns since October, 1920, is in splendid condition today, and, judging from its appearance, should last five more campaigns. It has withstood the destructive action of beet juices, has been easy to keep clean, and shows little sign of wear. We wish that every sugar man could know how our belt troubles have been so completely solved."

The acids in beet juices make short work of ordinary conveyor belts. The Independent Sugar Company spared no money trying to find belting that would resist these acids and withstand the heavy edge wear developed in this type of conveying. The belting problem was costing them time and money, not only in frequent replacements, but also in frequent interruptions in the work of the entire plant.

When the G. T. M. stepped into the office of the company, late in the summer of 1920, he found a chair and a welcome waiting for him. They had heard of the G.T.M. The G.T.M.'s business was to hear about belt troubles.

Together, they went over every point in the problem. They fitted together the practical knowledge of the Company's officials with their own conditions of service, and the G. T. M.'s expert knowledge of belting. The result was the G. T. M.'s recommendation of a special Goodyear Conveyor Belt, 180 feet long, 12 inches wide, 5-ply in thickness, with 1-16 inch cover.

How it has served efficiently and economically has been told in the plant superintendent's own words. In its first 100-day campaign, it carried 50,647 tons of sliced beets; in the second, 47,890 tons. It is exposed to year-'round weather conditions in a variable climate, and in winter carries tons of frozen beets. It has resisted edge wear.

You can rely on the G. T. M.'s analysis and his recommendation of powerful, trouble-free and long-wearing Goodyear Belts. To get in touch with the G. T. M., or for further information about Goodyear Belts, Hose, Packing, and other mechanical goods, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

XUM

SAFETY FROM THE SUPERINTENDENT'S VIEWPOINT*

By L. F. Knickerbocker, Kimberly-Clark Co., Niagara, Wis.

The superintendent of a mill always likes to believe his mill is a safe place for his men to work. He likes to know that there are no unnecessary hazards, that dangerous machinery is well guarded from incautious fingers and arms; that elevator shafts, stairways, or any place where a man may get hurt are adequately safeguarded. It is some relief to know that when you give instructions for a job to be done that has more than the usual hazard your foremen and men are safe to work on it with no unnecessary risks of injury. All in all, it is well worth while and a great satisfaction to know that your men know safety, think safety, and believe in safety.

Movement Held in Derision

When the safety movement was first started we found a great deal of contempt for our efforts on the part of the men. The older ones were especially hard to convince, and, of course, they held back the younger ones. The old timers disliked being told how to do a job without getting hurt; they knew all about it; they could take care of themselves. Our bulletins and propaganda were all bunk, the safety director had some sort of a soft graft for a job. Their idea was that someone had to get hurt occasionally, for there always had been accidents and always would be accidents. They were not trying to get hurt, no, but they could not see how all this talking about safety was going to keep them from getting hurt.

The guards about machinery were a source of annoyance to them, because it made them go around instead of reaching over and through places they were accustomed to reach. Guards were frequently removed from about the machines and only grudgingly put back when this was demanded. We found men laying off for the slightest injury and for fictitious injuries. A chew of tobacco was considered the best first-aid remedy for a cut or scratch. Anyone who had to have first aid for minor cuts or bruises was a "molly-coddle."

Warning the New Employee

Now, when a new man is started on a job he is told all about the dangers of accident incident to the job and the specific risks are pointed out to him by the superintendent. This is not done in a way to make him afraid of his job, but just to show him where to be careful. We hire quite a number of young fellows, many just starting out to work for the first time, as supercalender helpers. In carrying the sheet through the calenders there is a danger of a new man grabbing for the tail as it comes through in his hurry to carry it to the next set of rolls. In grabbing he is very apt to get his fingers between the rolls. Some are tempted to feel of the rolls while running, and, in doing so, they have their fingers caught. Such dangers as these are pointed out to them, and they are told in starting the paper through to stop and start all over again, rather than put their fingers where they will get pinched. They are also cautioned about the use of elevators and the code of signals to be used.

Safety Contests

It has been our experience that the best way to instill the spirit of safety in the men is through safety contests. Just the idea of a contest, something competitive, arouses the sporting blood in the men and they will go to their work with the idea of playing safe to win something. Each man looks out for the other fellow as well as himself; they begin to unconsciously get into team work on safety. They think of the disgrace and ridicule brought upon themselves if they get hurt and spoil a record. They think of building up a record and, once that record is established, they try to stick to it and, if possible, better it. They get away from thinking only of themselves if hurt, and the individual consequences.

A man will take more unnecessary chances if he alone loses by it, than he will if he is playing a game whereby his fellow players or workers lose if he loses. If a man sees a dangerous piece of machinery unguarded, a bad stairway, a hole in the floor or an unlighted passageway, he will report it to the proper authority for remedy and not wait for the next fellow, who perhaps is not so observing, to get hurt. It gets the man in the mill to feel somewhat like he does if he is playing a game of ball; and he knows that the team work counts. The men will watch the safety board like a score board, and if a red spot appears you will hear a disgusted, "Now, who got hurt?" Thatis the great benefit to be gained from a safety contest—the men learn co-operation in safety.

Safety contests should, if possible, be arranged between different mills, and not just between the departments in a mill. We have found that, by inter-department contests, there has always been some squabble as to which department certain workers belong, such as millwrights, electricians, and other maintenance men. In many cases these men run more chances of getting hurt than the operating force and, in case of a disputed placing of an accident, the men will lose heart. If it is mill against mill, the whole force is included and a fair competitive basis can be established to offset any difference in numbers of employees. Safety contests should be of sufficient duration, say, two or three months, to get safety with the capital "S" fully established so that the men will think safety after the contest is over. Nor should the contest be too long, say, six months or a year, because the men will lose interest in awaiting the outcome.

Another point in favor of the safety contest is the increased morale established. We have found that before we had safety contests the men would lay off for the slightest injury. Now, and especially during a contest, they will stick to their jobs through their own choosing even though somewhat handicapped. We leave it to the men to decide about coming back to work and sticking in case of injury. I believe it is wholly worth while to get such an *esprit de corps* established because it is bound to show up in the work.

Increasing Efficiency

We post bulletins showing the weekly and monthly production of machine tenders and their per cent of waste. These bulletins are closely watched, not only by the machine tenders but by all the men at the machines, showing that the team work is there. Each machine tender and his men want the highest production and the least waste, and to show that keen rivalry exists they will fight for a couple of hundred pounds of paper if they feel they are being done out of it. This rivalry has been built up until all existing records for production for the mill have been smashed, and, in doing so, the same high quality of paper was turned out. This just illustrates how safety work and safety propaganda can build up good, sound morale in a group af men, a morale that any superintendent might well be proud of; a morale that is worth real money in increased production and higher quality of paper. Safety work builds up the stamina to attain a record in safety and this same stamina is carried to the attainment of other records.

To make a safety-first movement a success it is quite essential to have the backing of the directors of the company for, at times, perhaps, it will be necessary to bring a little pressure to bear where the movement lags or is weak. With the directors behind the movement you get co-operation of superintendents; they get co-operation of foremen, and they, in turn, get the co-operation of the men. The foreman is the dominating figure in safety and he is responsible for the safety of the men under him. If the foreman thinks safety, acts safety and apportions his work with an eye to

*Read at meeting of Paper and Pulp Section, National Safety Council, Detroit, Mich., August 28-September 1, 1922.

XUM

GROUND WOOD
CHEMICAL PULPS

PERKINS-GOODWIN CO.
NEW YORK

PAPER

ALFRED LEEDS, President
KARL BECKER, Vice President

ERNEST R. COLLINS, Secretary
EDWARD M. MILLER, Treasurer

Becker Paper Corporation

350 Madison Ave., New York, N.Y.

317 Main Street, Springfield, Mass., Branch Office for New England States

Dealers in All Grades of Paper

SPECIALISTS IN

BOOK PAPER, GLASSINE and EMBOSSED GLASSINE PAPERS

Exclusive Distributors for

WESTFIELD RIVER PAPER COMPANY
RUSSELL, MASS.

safety, it is a sure shot his men will get the safety thinking and acting habit.

The Foreman's Responsibility

In our mill we make the foreman directly responsible for the safety of the men under him. If a man is hurt, we go to the foreman of that man's department for an explanation. If the department has no accidents or few accidents, the foreman gets the credit. Weekly bulletins are issued showing the safety record of each department and the foremen of each department are listed opposite their department record. These bulletins are posted and copies sent to the superintendent and company directors. No foreman likes to see a poor safety record opposite his name, when he knows his superiors are reading that record and that they believe in safety. Most of our recommendations for machine guards and other safety improvements come from the foremen. They are the men that know the hazards of their department better than anyone else. They are also the ones, through their foremen's club, to issue and accept challenges to safety contests with other mills. In our mill they have accepted the responsibility of safety, they have accepted it with a zest that is getting results, an enthusiasm that has caused them to go out for a world's record.

Implanting the Safety Seed

The directors of the Kimberly-Clark Company have always given the safety first movement their enthusiastic support since its introduction in their mills. They put up prizes for the winners of the safety contests, such as a pennant for the winning mill and Eversharp pencils or overalls for the men in the mill with the best safety record. They pay for combined entertainments and safety meetings to which the men and their families are invited. In this way safety is instituted in the home, and, with the home behind the movement, you have an all-powerful influence for safety.

The Niagara Mill, with its enviable record for safety, has won the greater of these prizes. In 1917 we had 83 accidents with a total of 1751 days lost through accidents and a cost of $13,038.73. For 1919 this had been cut down to 79 accidents with 897 days lost and a total cost of $3,302.08. For 1921 we had the remarkable record of only 12 accidents with 371 days lost and a cost of $1,129.62. The cost to carry our own compensation per $100.00 pay roll has been cut from $2.48 in 1917 to $.29 in 1921. My own department, the Beater Room, has gone 355 days to July 15th without accident, the finishing room 383 days and the machine room 443 days.

IMPROVING FOREMANSHIP*

By Theodore Struck, Assistant Director of Vocational Education, State Department of Public Instruction, Harrisburg, Pa.

Foremen hold a unique and an important place in industry. On the one hand a foreman represents the men; he has come up through the ranks, he knows his work and understands the point of view of his workers, for he has been, and is still, to a considerable extent, one of them. A successful foreman is a leader. His opinions are regarded highly by the men, and his efforts can be expended so as to be of much value to them.

A foreman, on the other hand, represents the management to his men. He has been selected as a foreman because he has proven himself to be a good workman, because he has given evidence of unusual ability, and because he has been loyal to the firm. Now, as foreman, the obligation rests upon him to instill and perpetuate that same loyalty on the part of his workers toward the management, to interpret to the men the policies of the company, and to present to the management the points of view of those he supervises. He is the connecting link between the men and the management; and his success will depend very largely upon his ability to understand, to analyze, and to harmonize, when possible, the points of view of the men and the management. Foremen must not only be fair in their dealings, but should be able to instill in others the point of view that has won them recognition.

Foremen, almost without exception owe their position, to a greater or less degree to the fact that they have an inquiring or a "problem solving" attitude of mind. They are big enough to want to learn all about their work. I have said that foremen know their jobs. This is true in so far as a knowledge of the production end is concerned. Sometimes it does not carry over to some of those responsibilites that are peculiar to foremanship. For example, a worker's main job often consists in doing a certain kind of work more or less difficult, that is mastered during a learing period before he becomes a foreman, whereas a foreman's job may involve (1) supervisory responsibilites; (2) managerial responsibilities; (3) instructional responsibilities; some of which are relatively new to him.

Requisites of Foremanship

Now it must not be taken for granted that a man who is an expert workman, and who "knows his job" thoroughly from the production standpoint, is necessarily a good instructor. It is true that one must know his job thoroughly before he can successfully instruct others in it, but he must be able to do more than that. The following is required for good instruction.

1. *Ability to do the job.* This includes the necessary technical knowledge, and skill required.

2. *Ability to analyze the job.* This means for purposes of instruction a careful and detailed inventory of the teaching content of the whole job.

3. *Ability to arrange the instruction* in a good teaching order. A good instructional order is not necessarily a "logical" order, but one that closely combines theory and practice, and one that stimulates interest on the part of the learner. It must frequently be adapted to fit in with production requirements.

4. *Ability to effectively impart the instruction.* This requires a thorough knowledge of what is to be taught, a keen interest in the learner, an understanding of how to teach, and some capacity to instruct others.

5. *Ability to measure the results attained.* Instruction from a production standpoint is of value only in so far as it results in achievement on the job. This final step of checking up the effectiveness of instruction is important.

Systematizing Instruction

Organized or systematic instruction is much more effective than haphazard instruction. As competition increases it will be more and more necessary to provide carefully planned instruction. It is wasteful of time, human energy and destructive to materials, tools, and equipment to have learners "pick up" their occupational knowledge and skill. Modern foremanship definitely involves more or less responsibility for instruction. Even where there is a special training department with a separate instructional staff it will be necessary to get the co-operation of all foremen. The latter will want to be informed, and competent to give help.

Improvement Methods

There are a number of ways of improving foremanship, some of which are more effective than others; among them are the following:

*Read at meeting of Paper and Pulp Section, National Safety Council, Detroit, Mich., August 28-September 1, 1922.

XUM

1. By means of "trial and error" on the job.
2. By means of reading and individual home study.
3. By means of organized home study or correspondence courses.
4. By means of lectures or illustrated talks.
5. By means of foremen's conferences.

One or more of these methods may be used to advantage, depending upon such conditions as: The time available, the nature of the instruction, the personnel of the group, and instructional means available.

The Foremen's Conference

Very good results have been attained with foremen's conferences in which small groups have met in round-table fashion to discuss ways and means of self improvement. This type of a foremen's conference may be illustrated by some that have recently been conducted by Mr. Frank Cushman of the Federal Board for Vocational Education and also by the writer, at the Hammermill Paper Company of Erie, Pennsylvania.

The conferences were intensive in nature. The groups of foremen met for five hours per day for two weeks. There were about sixteen foremen in each group. They met in a room in the Service and Personnel Department building.

The room was equipped with a large table, comfortable chairs, a blackboard, and a blank paper chart about three feet by four feet in size. Much of the illustrative material that was developed during these conferences was wanted for future use, so it was placed upon the large paper sheets where it would be available to the men individually, and collectively.

The conferences centered around the idea of job analysis as a means to improving foremanship. Each foreman made careful and detailed analysis of his various responsibilities. These were analyzed as to his supervisory responsibilities, his managerial responsibilities, and his instructional responsibilities. Each foreman analyzed his own job, assisted by questions by the conference leader and by questions and suggestions by other foremen. It is evident that the main purpose of the conference leader was to assist the foremen to make their own analyses rather than to have him act as an outsider who tried to tell the foremen how to better their work. The latter method would not have succeeded as well.

After the problems of job analysis had been mastered consideration was given to questions involving various types of co-operation such as horizontal co-operation, or that with other foremen, and vertical co-operation, or that with workers on the one hand, and with the management on the other.

The success of American industry is due in a large way to our ability to produce high grade goods fast and economically. This is the main reason why we can pay men twice as much as English, and four times as much as German employers. "Co-operation" is a fitting keystone for the arch of efficient production. The discussion on this topic was decidedly interesting and profitable.

Self Instruction for the Foreman

After considering and discussing the most important elements of good instruction, arrangements were made to have each foreman teach some one thing to another foreman who had no previous training of that kind. This served several purposes; first, it placed each foreman in the position of a learner. This was valuable, as it frequently happens that experts do not fully appreciate a "green" man's difficulties in learning something brand new; secondly, it placed each foreman in the position of an instructor who was closely watched and criticized by the other foremen of the group. The criticisms were reserved until after the completion of the instruction. Lastly, it showed clearly that a mastery of technical knowledge and trade skill does not in itself assure success as an instructor. In view of the fact that nearly all of the foremen had instructional responsibilities this little teaching practice, under supervision, was very helpful.

"Teach—Don't Boss!"

The foremen all attended voluntarily. The management of the Hammermill Paper Company did not care to have attendance upon any other basis. There is an exceptionally fine spirit in the plant. One of the company's slogans has for years been, "Teach, don't boss."

In order that the superintendents might be kept fully informed about the progress made and the conclusions reached in the foremen's conferences, the conference leader met the superintendents' group for half an hour daily.

Modifications of the intensive, round-table conference method of improving foremanship are being used quite extensively in Pennsylvania and elsewhere. Frequently this takes the form of a general meeting that may be attended by several hundred foremen. At this meeting some person presents or "opens" the discussion of some problem of mutual interest. This may take thirty minutes. At the conclusion of this presentation the foremen divide into small discussion groups of from ten to twenty persons. Each of such groups is in charge of a discussion leader. All discussion leaders meet before or at the close of the conference to compare results, and to plan for the next conference.

State Co-operation

Foremen's conferences of the latter type have been in out state during evenings, one evening per week for perhaps ten weeks. The State Department of Public Instruction has co-operated in this through local boards of education and with the University of Pennsylvania.

Instruction such as has been described is not on overhead expense, and not an experiment of doubtful value. It is in the true sense of the word a sound investment—one that has demonstrated its worth as a means of promoting alike the welfare of men, foremen, and the management.

Graphic Arts Exposition Opens in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 28, 1922.—One of the most novel exhibits of the second Graphic Arts Exposition which opened Monday in the Mechanics building on Huntington avenue was the baby Fourdrinier of the American Writing Paper Company.

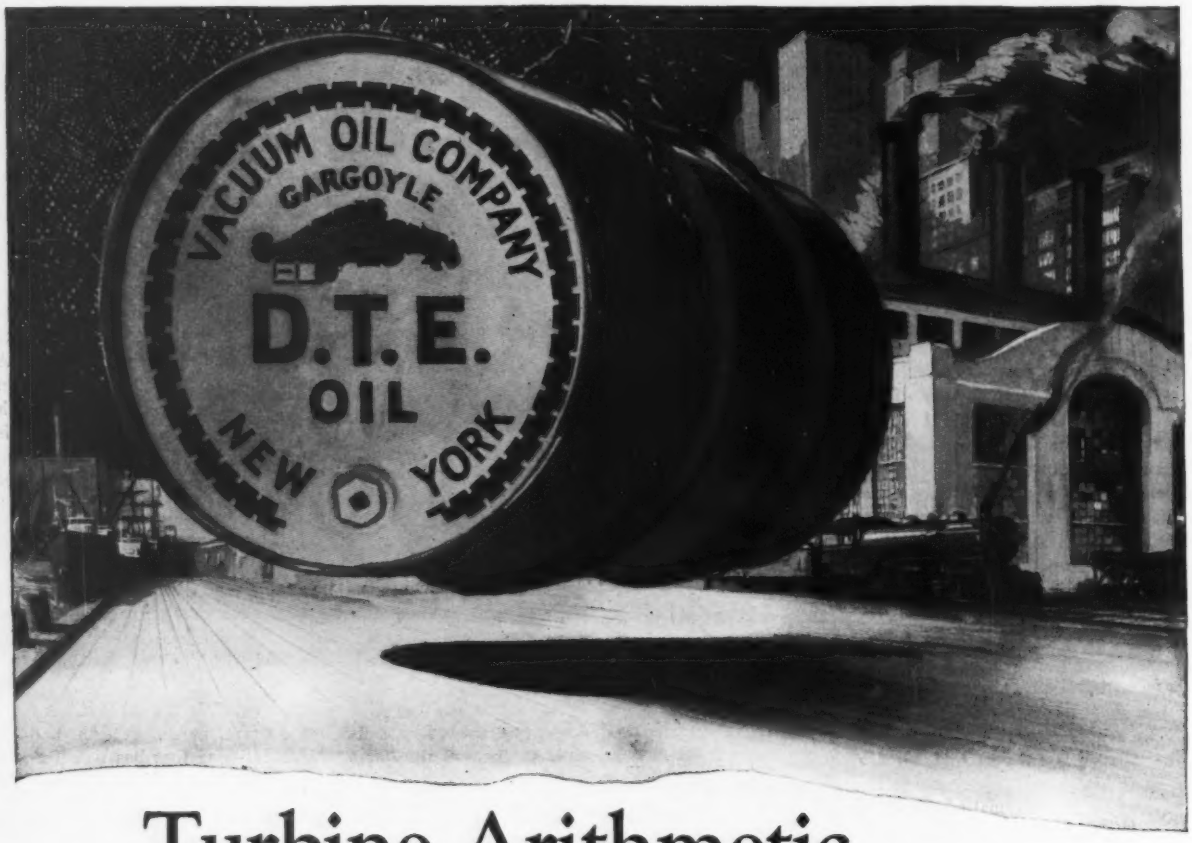
More than one quarter of a million people have already seen the little miniature paper mill which next goes to the Direct Mail Exposition to be held shortly in Cincinnati and then to the U. T. A. convention in Cleveland.

The three Boston representatives of the company, John Carter & Co., Arnold Roberts & Co. and the Whitaker Paper Company, all had booths in conjunction with the exhibit of the home company. The Arnold Roberts Company is featuring the Deckle-Daigle line of the American Writing Paper Company while the other two companies are featuring more the bond papers of the company.

The old hand process of making paper was also shown in comparison with the present methods. In the laboratory which Miss Kiely conducted three kinds of tests were used, chemical, physical and microscopic. The first group consisted of quality tests and the instruments used included the new Perkins tensile tester and the two Schopper tensile testers and the Schopper folder. The physical tests included tests for glue, rosin and fillers while the microscopic tests included pictures and slides.

Other exhibitors included the Simonds Manufacturing Company, the world's largest makers of machine knives; McCain Brothers Manufacturing Company who manufacture paper feeding machinery; Chandler & Price Company, manufacturers of Gordon presses and paper cutters; George F. McLauhlin Company of Boston, national cutters; Cleveland Folding Machinery Company of Cleveland, Ohio; A. Storrs & Bement Company of Boston, and several others.

XUM



Turbine Arithmetic

How to protect your investment in that expensive prime mover

THE operator of a large power station recently said,—

> *"We figure it costs us $200 an hour when one of our turbines is out of order, and it generally takes about 24 hours to clean up a turbine circulation system. Dependable turbine oil would be cheap at $5 a gallon."*

Your turbine represents a large capital investment. Does not this large investment warn you against taking chances with incorrect lubrication that may cripple your turbine for hours or days at a time?

Possibly you may not realize this:

Turbines are extremely sensitive to incorrect lubrication. Oils that will not separate readily from water or other impurities promote the formation of sludge — the bane of every turbine operator. And, you know, without our reminding you of it, the cost of even temporary shut-downs.

The correct lubrication of turbines has been one of the outstanding successes of the Vacuum Oil Company. Gargoyle D. T. E. Oils are manufactured from the highest grade of crudes and are specially treated to meet the exacting requirements of turbine lubrication. Gargoyle D. T. E. Oils, if properly used, will not form sludge.

Turbine manufacturers know the danger, bother and expense caused by incorrect lubrication. That is why practically all of them today endorse the use of Gargoyle D. T. E. Oils.

VACUUM OIL COMPANY

The only way to fully protect your investment in your turbine is to make absolutely certain that your lubrication is correct.

Write today to our nearest branch office for a copy of our pamphlet on Turbines — their construction, operation and lubrication. You will find it an interesting and authoritative treatise on this subject.

Stocks of Gargoyle D. T. E. Oils are carried in all the principal cities of the world.

The Lubrication Audit

Explained Step by Step in Condensed Outline

INSPECTION: A thoroughly experienced Vacuum Oil Company representative in co-operation with your plant engineer or superintendent makes a careful survey and record of your mechanical equipment and operating conditions.

RECOMMENDATIONS: We later specify, in a written report, the correct oil and correct application of the oil for the efficient and economical operation of each engine and machine. This report is based on:—

(1) The inspection of the machines in your plant.

(2) Your operating conditions.

(3) Our 56 years of lubricating experience with all types of mechanical equipment under all kinds of operating conditions throughout the world.

(4) Our outstanding experience in manufacturing oils for every lubricating need.

CHECKING: If, following our recommendation in this audit, you install our oils, periodical calls will be made to check up the continuance of the desired results.

FOR THE ABOVE FREE SERVICE address our nearest branch office.

Domestic Branches:

New York (*Main Office*)	Boston	Chicago	Philadelphia
Detroit	Pittsburgh	Indianapolis	Minneapolis
Des Moines	Buffalo	Rochester	Albany
	Dallas	Kansas City, Kan.	

GARGOYLE

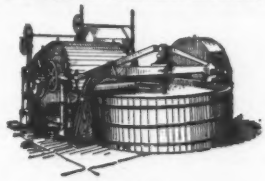
Lubricating Oils

A grade for each type of service

A Lubrication Audit

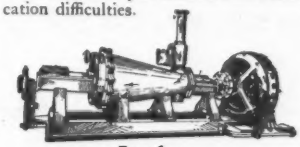
in the *Paper Industry*

would point out the Correct Lubrication for the important machines as follows:



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of **Gargoyle D. T. E. Oil Extra Heavy** overcomes beater lubrication difficulties.



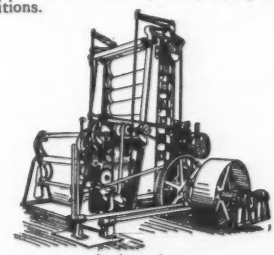
Jordans

Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend **Gargoyle D. T. E. Oil Extra Heavy.**

Paper Machines

For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as **Gargoyle D. T. E. Oil Extra Heavy.**

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing tendency and maintain a perfect oil film. We recommend **Gargoyle Voco Engine Oil No. 1** for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calender bearings are subjected to heavy pressures and high frictional heat. The regular application of **Gargoyle D. T. E. Oil Extra Heavy** insures uniform speed, and consequently minimizes "broke."

VACUUM OIL COMPANY

Editorial

Vol. LXXV New York, August 31, 1922 No. 9
FIFTY-FIRST YEAR

The Value of Technical Matter

A salesman recently inquired: "Why does the PAPER TRADE JOURNAL devote so much space to that dry technical stuff every week?" The interrogator pointed out that these weighty dissertations were not only uninteresting to him but that they bored him. What did he care about the baryta resistance of wood pulps, for example, or the utilization of sulphate waste liquors?

In pre-historic times the transition from stone to iron implements was a matter of thousands of years. Without science—invention and some medium for communicating the advances of civilization to one another, men might well be dwelling on cliffs today and chiseling their records in great slabs of stone with tools of sharp flint.

Even a century ago progress was slow moving. The world in general was unreceptive to new ideas—reactionary. It was a far cry from Fulton's steamboat to the Aquitania and from the first dinky locomotive that wheezed along the B. & O. narrow-gauge rails to the Golden Gate Limited of today. With the era of invention and the inauguration of big business in this country, shortly after the Civil War, one of the greatest factors in the dissemination of industrial knowledge and experience was introduced—trade journalism.

When the PAPER TRADE JOURNAL was first published—over half a century ago—one of its primary aims was to stimulate investigation and research in the paper industry as well as to encourage co-operative study and to provide a medium for the interchange of ideas amongst its readers in the paper and pulp industries. The promotion of efficiency in manufacturing processes is a cause that has always been championed by this journal and during the comparatively brief span of its fifty years of existence it has not only seen but has contributed to its fullest extent to the greatest era of expansion in the world's history.

Through scientific processes and technical improvements the paper industry has risen from a minor trade employing at best a few hundred people to a great business involving hundreds of thousands. Chemists, inventors, scientists have devoted their lives to some relatively small improvement in the great mechanism of the paper industry. And then, perhaps, they have written some "dry technical stuff" in an endeavor to communicate to the world or to the trade what they have learned through years of research.

"Uninteresting" or "boring" as some of their articles may have been to the lay man, they have individually contributed enough to the expansion of the industry to make room for hundreds of additional merchants, salesmen or jobbers. Might not the paper man who was bored with technical data be one of these hundreds.

In another part of this issue appears a short article describing a safety code for paper and pulp mills. The National Safety Council, in conjunction with the American Engineering Standards Committee, is compiling this code and the Technical Association of the Pulp and Paper Industry has been asked to co-operate in its formulation.

The Technical Association has been co-operating regularly with manufacturers of felts for paper and pulp mills.

It has co-operated with manufacturers of paper machine wires in the development of the standards of manufacture and practices in their use.

It has co-operated with the Bureau of Standards through its representation on the Advisory Committee to that bureau.

It has co-operated with the Forest Products Laboratory as well as with the Bureau of Standards on such subjects as mill effluents and the utilization of barking drum waste, two of the phases of waste elimination in the industry being initiated by the Association.

Besides these subjects co-operative work with the same organizations is being undertaken on the important problem of efficiency in the drying of pulp and paper.

On vocational education, in co-operation with the Canadian Pulp and Paper Association, it has prepared a set of text-books on the "Manufacture of Pulp and Paper," in five volumes. Further, foreman training conferences and correspondence courses on pulp and paper manufacture have been arranged for with the Canadian Correspondence College, at Gardenvale, Quebec, and with the Extension Department of Wisconsin University in the United States.

Since its inauguration, a scant eight years ago, the Technical Association of the Pulp and Paper Industry has been of untold benefit to the trade. It is an organization of those interested in any phase of paper, its raw materials, chemicals, machinery, engineering, processes, products and its industrial management. While mills have plodded along, grinding out their monthly tonnages and while markets have risen and fallen in keeping with economic conditions, the Technical Association has been exploiting new fields of research—reaching out into the future and blazing a trail of progress for the decades to follow.

The individual companies represented in the membership of the Association now number over two hundred and fifty. More than thirty companies are listed as corporate members.

The PAPER TRADE JOURNAL is the official organ of this association. An entire section of the periodical—approximately 12 pages—is devoted each week to the interests of the Technical Association at a cost aggregating thousands of dollars a year. It is the belief of the PAPER TRADE JOURNAL that its co-operation with the Technical Association in the dissemination of the knowledge, experience and discovery in the paper field is contributing not only a substantial share in the present day advancement of the industry, but that it is also laying a foundation for a greater industry in the generations to come.

The Technical Section of the PAPER TRADE JOURNAL is segregated from other items of news or general interest and, in accordance with the policy which has been maintained for over fifty years, it is the effort of the editor to preserve the proper proportion among the various phases of the industry and to print all the news relating to the paper, pulp or allied trades.

When the Technical Section was inaugurated the size of the periodical was correspondingly increased in order to maintain this balance and to present every matter of interest to paper men in its proper news value.

XUM

There is no gainsaying the fact that this particular section does not provide light reading for the average paper man, but through the progress made by the many who do find it of untold value, a bigger place in the industry may some day be provided for the very man who recently objected to "giving so much space to that dry technical stuff."

Canadian Paper Exports Decline

Canadian exports of pulp and paper in July showed a decline from the previous month's figures, the total value of the exports being $9,738,252 compared with $10,534,876 in June. Exports in July of this year, however, were greater than in July, 1921, when the value was $8,666,556.

News print to the value of $5,453,845 was exported in July of this year as compared with $5,538,623 in July of last year.

The exports of sulphate pulp in July were valued at $778,948 as compared with only $390,000 in July of last year. The exports of bleached sulphite pulp in July were valued at $1,012,774 as compared with $515,280 in July of last year. The exports of unbleached sulphite pulp were valued at $1,213,700 as compared with $990,807 in July of last year.

The exports of mechanical pulp in July were valued at $694,355 as against $974,246 in July of last year.

The quantity of wood pulp exported in July, 1922, was almost double of the quantity in July, 1921, but owing to lower prices the value did not increase in proportion.

Of these exports there was sent to the United States in July paper to the value of $5,242,723 and pulp $2,794,497; to the United Kingdom, paper $193,502 and pulp $460,914 and to all other countries, paper $602,250 and pulp $444,366.

Exports of pulp wood in July were 90,965 cords valued at $946,946 compared with 75,897 cords in June valued at $815,155.

For the first four months of the current fiscal year there is a considerable increase in the value of pulp and paper exports over the corresponding period of 1921; the total value for 1922 being $35,286,317 compared with $30,331,249 in 1921.

Exports of pulp wood for these four months amounted to 291,640 cords valued at $2,978,732 compared with 284,401 cords valued at $3,704,327 for the corresponding four months of 1921.

Paper Maker Father of Twentieth Child

HOLYOKE, Mass., August 28, 1922.—Is there any other paper-maker in the country who can beat this record? Zoel Tanguay, of 113 Mosher street, this city, listed in the Holyoke directory as a paper-maker, on last Friday became the proud father of his twentieth child. Mr. Tanguay is 45 and his wife is 39. They have been married 24 years. There were no twins or triplets. Mr. Tanguay is of a family of 22 children and Mrs. Tanguay is of a family of 13 children. Thirteen of the 20 children are living.

Johns-Manville Mill at Waukegan Almost Ready

WAUKEGAN, Ill., August 28, 1922.—The new plant of Johns-Manville, Inc., here will be ready to begin operatinos sometime in October. The plant will be a duplicate of the plant at Manville, N. J., the equipment of which consists of eight 1,500-lb. and four 2,000-lb. Beaters and two three and two five cylinder machines; widest trimmed sheet 78 inches. The production will be wood fed and asbestos paper, 250,000 lbs. 24 hours.

Water Power in Canada

NEKOOSA, Wis., August 28, 1922.

EDITOR PAPER TRADE JOURNAL:

Edward Beck, of the Canadian Pulp and Paper Association, during my absence from Wisconsin on a visit to the Pacific Coast, replied to my recent article on the "Water Powers of Canada" and its relation to the tariff which is by so many of us considered needed to protect American industries generally and needed on pulp and paper for the protection of the workers and those in the paper industry in particular.

But there seems to be even other kinds of *powers* in Canada, even more gigantic and powerful than its water powers, for the Congress of the United States, so it is reported, even in the face of all the evidence to the contrary presented by the workers and by those managing the matter for the industry, has seen fit to erase from the proposed tariff law all reference to a duty on pulp, which it is also said it will do on paper.

While the proposed tariff is not yet a law and there is always hope while there is life, the matter is not yet a dead issue and there will be other Congresses; still there will ever be the need for a tariff, and if those favoring such an item will but be persistent, sooner or later their point will be seen and they will win, to the great advantage of a far greater number of American citizens than can ever be injured by such a duty, threats or no threats from the late Mr. Norris.

The members of the committee of the American Paper and Pulp Association, as well as the association members themselves, are to be congratulated that they got anywhere with the great weight of the publishers against the plan, but there evidently is an unseen power from without our border which has not been given enough consideration.

B. T. MCBAIN,
Nekoosa, Edwards Paper Co.

A Warning to the Trade

CHICAGO, August 28, 1922.

Editor PAPER TRADE JOURNAL:

We wish to call your attention to a little incident which happened to us the other day, and in an effort to save others in the paper business we would suggest that our experience be published in the PAPER TRADE JOURNAL.

There was a very nicely dressed old gentleman, about 65 or 70 years old, came into our office and asked to see the writer. Being out at the time, the old gentleman said he would wait. His story was that he had at one time been connected with a paper concern in the south, had come to Chicago a few weeks ago and conditions being against him had gone broke. His story sounded quite plausible, and his appearance was such to ward off any suspicion of a "touch." However, that was the sum and substance of his tale.

We wrote the concern in the south, to whom he referred us, and we were informed that the man never did work for them. The letter was signed by the treasurer, who had been with the firm twenty-two years and was in a position to know. The old gentleman gave the name of Spaulding, but very likely this was an assumed name.

We were not "stung" to any great extent, but we feel that our experience should be recorded, thus saving others.

Very truly yours,

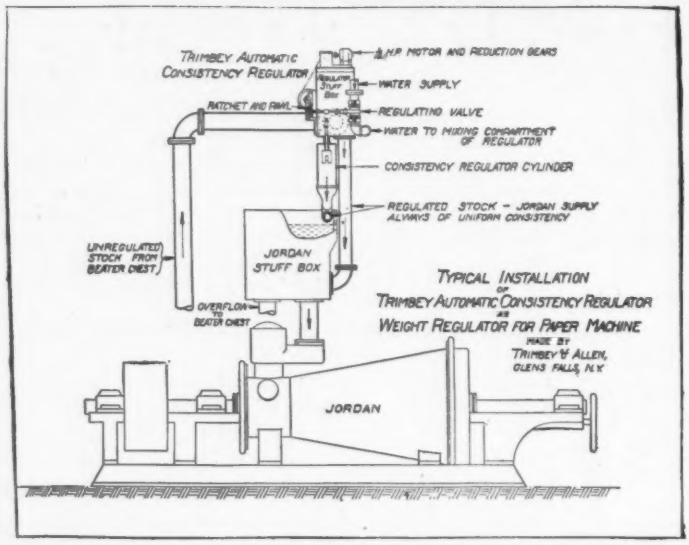
REP. A. J. HERMANSON,
American Tissue Mills.

Bulletin on Ventilating Fans for Paper Mills

Ventilating fans for paper mills are described in the new little bulletin, No. 10, of B. F. Perkins & Son, Inc., Holyoke, Mass., manufacturers of paper mill machinery specialties. The leaflet, entitled "A New Angle on Ventilating Fans," will be forwared to those interested upon request.

XUM

UNIFORM STOCK


TRIMBEY AUTOMATIC CONSISTENCY REGULATOR
½ H.P. MOTOR AND REDUCTION GEARS
WATER SUPPLY
RATCHET AND RAWL
REGULATING VALVE
WATER TO MIXING COMPARTMENT OF REGULATOR
CONSISTENCY REGULATOR CYLINDER
REGULATED STOCK – JORDAN SUPPLY ALWAYS OF UNIFORM CONSISTENCY
UNREGULATED STOCK FROM BEATER CHEST
JORDAN STUFF BOX
OVERFLOW TO BEATER CHEST
JORDAN
TYPICAL INSTALLATION OF TRIMBEY AUTOMATIC CONSISTENCY REGULATOR AS WEIGHT REGULATOR FOR PAPER MACHINE
MADE BY TRIMBEY & ALLEN, GLENS FALLS, N.Y.

This is the machine that will regulate your paper stock to a uniform consistency, thus insuring UNIFORM BRUSHING ACTION at the Jordan. Given stock of uniform character and consistency going on to the wire you will get UNIFORM WEIGHTS and UNIFORM RUNNING CONDITIONS.

This regulator will also cause to be delivered at Beaters, Mixers or Bleachers, stock of a set, uniform consistency.

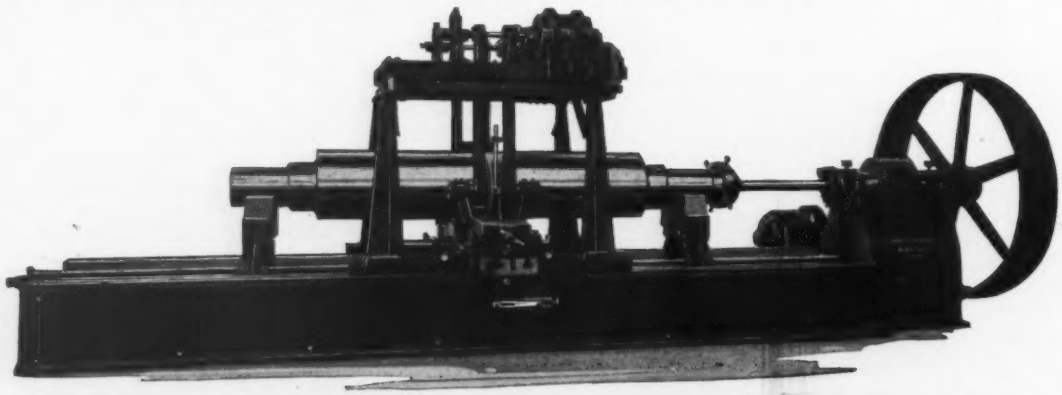
See our exhibit. Booth 515, 8th Exposition of Chemical Industries, Grand Central Palace, Sept. 11-16.

TRIMBEY MACHINE WORKS **Glens Falls, N. Y.**

M. G. TIBBITTS, *Sales Manager*

LOBDELL

ROLL GRINDERS are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del., U. S. A.**

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W. G. MacNAUGHTON, Secretary

CHEMICAL EXPOSITION TO OPEN SEPTEMBER 11

September 11 will mark the opening of the 1922 National Exposition of Chemical Industries at the Grand Central Palace, New York, lasting one week and closing on September 16. The Exposition, with its exhibits, numbering over 400 American manufacturers of chemicals and equipment and covering four floors of the Grand Central Palace, will be one vast show-room of materials which the producers have to offer the consuming industries of the United States. Chemical raw materials and machinery for the numerous industries controlled or influenced by chemistry will make up the main body of exhibits. Special sections given over to the latest ideas in industrial fire and explosion prevention and fire fighting apparatus, and to a group of fuel and power efficiency devices, both of vital importance to the chemical and chemical consuming industries, will be a feature of the Exposition this year.

With "Chemical Exposition Week" close at hand, the program of scientific meetings, speakers, motion pictures, and dinners to be held in conjunction with the Exposition, is rapidly nearing completion. Meetings and scientific discussions during each afternoon will be under the auspices of various chemical and allied organizations and will be held in the special auditorium of the Grand Central Palace. The days on which the different societies will conduct the program for the benefit of visiting folks, have been arranged, but are still subject to last-minute change. The official opening of the Exposition will take place on Monday evening, Sepetember 11. The speakers at the opening session will include Wayne B. Wheeler, general counsel for the Anti-Saloon League, who will talk on "The Attitude of the Anti-Saloon League Toward Industrial Alcohol as a Commodity of the American Chemical Industry." Dr. Charles Herty, president of the Synthetic Organic Chemical Manufacturers of the United States, will also speak at the opening session.

Afternoon Meetings

The days during the week of the Exposition on which the afternoon speakers' programs will be under the direction of the various societies have been scheduled as follows:

Monday, September 11: Official opening, 8:00 P. M., in the Grand Central Palace Auditorium. Speakers, Wayne B. Wheeler, general counsel for the Anti-Saloon League; Dr. Charles Herty, Chairman of the Exposition Committee and President of the Synthetic Organic Chemical Manufacturers of the United States, and others.

Tuesday, September 12: Program will probably be under the direction of the Synthetic Chemical Manufacturers of the United States. 2:00 P. M.

Wednesday, September 13: Program under the direction of the Technical Association of the Pulp and Paper Industry. 2:00 P. M.

Thursday, September 14: Program under the direction of the Technical Photographic and Microscopic Society, 2:00 P. M.

Friday, September 15: Program under the direction of the American Ceramic Society. 2:00 P. M.

Friday evening, September 15 (or Saturday afternoon, September 16): A Symposium on Standardization. Speakers from various organizations and authorities on different phases of standardization as applied to their special field.

All sessions of the program which will be held in the Grand Central Palace, with the exception of the dinners of various societies, will be open to all visitors at the Exposition. The annual dinner of the Salesmen's Association of the American Chemical Industry, and also that of the American Institute of Chemical Engineers will be held on Wednesday evening, September 13. At the former, Herbert Hoover, Secretary of Commerce, will be the chief speaker. The Alpha Chi Sigma holds its dinner on Thursday evening, September 14.

Motion Picture Program

The motion picture program, revised to date, has been announced as far as it is completed, a few late additions being possible. The pictures will be shown each afternoon and evening in a special auditorium for that purpose, and are as follows:

"Recovering Values from Fume and Smoke" (1 reel); courtesy of the U. S. Bureau of Mines and the Research Corporation.

"Inspiration: One of the World's Great Copper Mines" (3 reels); courtesy of the U. S. Bureau of Mines.

"The Story of Abrasives" (4 reels); courtesy of the U. S. Bureau of Mines and the Carborundum Company.

"The Romance of Cotton" (1 reel); illustrated with address by David Wesson of the Southern Cotton Oil Company.

"The Story of Heavy Excavating Machinery" (4 reels); courtesy of the U. S. Bureau of Mines.

"The Story of Asbestos" (4 reels); courtesy of the Johns-Manville Company.

"The Story of Sulphur" (2 reels); courtesy of the U. S. Bureau of Mines and the Texas Gulf Sulphur Company.

"Mexican Petroleum" (4 reels); courtesy of the U. S. Bureau of Mines.

"The Story of Air Reduction"; courtesy of the U. S. Bureau of Mines.

"The Manufacture of News Print Paper at the Spanish River Pulp and Paper Company Mills in Ontario" (8 reels); courtesy of the G. H. Mead Company.

"The Story of Natural Gas"; courtesy of the U. S. Bureau of Mines.

XUM

"Nickel and Copper Mining, Smelting and Refining" (3 reels); courtesy of the International Nickel Company accompanied by address.

"Prospecting for Gold in Northern Ontario" (2 reels); courtesy of the Ontario Dept. of Mines, Canada.

"Assaying for Gold in Northern Ontario" (1 reel); courtesy of the Ontario Dept. of Mines, Canada.

"Dust Explosions" (1 reel); courtesy of the U. S. Bureau of Chemistry.

"Protozoa and Rotifers: Studies in Microscopic Animal Life" (1 reel); courtesy of Philip O. Gravelle.

"Protecting Buildings against Lightning" (1 reel); courtesy of the Baltimore Copper Smelting & Rolling Company.

"Extinguishing the Largest Oil Fire in the History of Caspar, Wyoming" (1 reel);

"Fire Extinguishing Tests on Blazing Oil Tanks at Port Arthur, Texas" (1 reel);

"The All-Weather Fire Extinguisher that Won't Freeze" (¼ reel);

"An Industrial Firefoam Sprinkler System" (1 reel).

The four films mentioned above are the courtesy of the Foamite Childs Corporation.

"Barrel Making in America" (2 reels); courtesy of Lucas E. Moore Stave Company.

Program of the Paper Meeting

The program of the "Paper Meeting" under the direction of the Technical Association of the Pulp and Paper Industry, to be held Wednesday afternoon, September 13, follows:

"Safety and Efficiency Appliances for the Boiler Plant" by W. C. Edge of the Paul B. Huyette Company.

"Trimbey and Tibbitts Proportioning and Metering System for Paper Stock" by E. J. Trimbey of the Trimbey Machine Works.

"Rotary Filters for Washing of Paper Pulp and for Filtering and Washing Caustic Lime Mud" (illustrated) by Geo. D. Dickey of the Industrial Filtration Corporation.

"Efficiencies and Economics in Washing Black Liquor for Digested Soda and Sulphite Stock" by R. G. Walker of the Oliver Continuous Filter Company.

"The Merco Nordstrom Plug Valve" by L. D. Mills of the Merrill Company.

"Testing Colored Materials for Fastness to Light" by H. S. Thayer of the Atlas Electric Devices Company.

"Instruments for Promoting Efficiency in the Paper Mill" by A. E. Campbell of the Schaeffer & Budenberg Manufacturing Company.

"The Carbon Dioxide Record of Combustion Efficiency" by C. C. Phelps of the Uehling Instrument Company.

"Steel Belts and their Application to the Solution of Conveying Problems" by Harry Carlson of Sandvik Steel, Inc.

"The Scott Evaporator as Used in the Pulp Mill for Recovering Soda from Spent Liquors" by H. Austin of Ernest Scott & Company.

"Dust Protection with Particular Reference to the Use of Respirators" by F. M. Rockwell of Willson Goggles, Inc.

"Continuous Causticizing with Lime Recovery and Reuse" by W. D. Mount of the Glamorgan Pipe and Foundry Company.

"The Grinnell Dryer Applied to Wall-Paper and Coated Paper" by Jerome D. Stein of the Grinnell Company.

"The V-Notch Meter and its Application to the Paper Mill" by L. D. Chase of the Yarnall-Waring Company.

"The Proper Selection and Application of Dyes for Paper" by L. Mann of the National Aniline and Chemical Company.

Technical Photographic Program

The program of the Technical Photographic and Microscopical Society on Thursday afternoon will have many interests for the Pulp and Paper men: it is as follows:

TECHNICAL SECTION, PAGE 102

"Photomicrography in Pulp and Paper Research Problems" by Miss Eloise Gerry and Dr. E. M. Diemer, Forest Products Laboratory, Madison, Wisc.

"The Photomicroscopy of Paint and Rubber Pigments" by Henry Green of the New Jersey Zinc Co., Palmerton, Pa.

"The Finishing of Motion Picture Films" by Dominic S. Mungillo, Craftsmen's Film Laboratory, New York.

"Mechanics of Motion Picture Apparatus" by Clarence W. Gibbs, Victor Animatograph Co., New York.

"The Motion Picture as an Aid to Industry" by Alfred B. Hitchins, Ph. D., F.C.S., Director Ansco Research Laboratory, Ansco Company, Binghamton, N. Y.

"Microscopy in Leather Tanning" by Guido E. Daub (A. F. Gallun Sons Company, Milwaukee, Wisc.).

"Use of the Microscope in the Textile School" by Albert H. Grimshaw, Textile School, New Bedford, Mass.

Standardization Program

The standardization program is as follows:

W. D. Collins (U. S. Geological Survey), "Moderation in Standardization."

N. F. Harriman (U. S. Bureau of Standards), "Standardization from the Consumers' Point of View."

I. G. Jennings (Glass Container Association), "Discussion of the Reasons for the Varieties of Shapes and Sizes."

J. M. Roberts (Secretary of the Apparatus Manufacturers Association of the United States), "What has been accomplished in the Standardization of Scientific Apparatus."

Ross C. Purdy (Secretary of the American Ceramic Society and Chairman of Committee—Refractories of the American Society of Testing Materials), "Standardization of Fire Clays and Refractories."

Emerson P. Poste (Elyria Enameled Products Company), "Standardization of Enameled Wares for Chemical Purposes" with other speakers whose names and titles of addresses will be announced.

Miss Lida Hafford, Director of the General Federation of Women's Clubs, of Washington, D. C. will speak at the Exposition on "Woman's Interest in Chemistry in America," being one of the few women who have taken part on the programs of the Chemical Exposition since its inception in 1915.

Safety Code for Paper and Pulp Mills

The National Safety Council, in conjunction with the American Engineering Standards Committee, is preparing a safety code for paper and pulp mills. The Technical Association, through its president, George E. Williamson, has been asked to co-operate in the compiling of this code. It will apply to the inherent hazards peculiar to pulp and paper mills. The requirements applying to steam and electrical plants, machine shops, power transmission, etc., are dealt with in special codes for each subject.

This request for co-operation is another evidence of the increasing importance of the Technical Association in the Pulp and Paper industry. Other evidences are its co-operation with the manufacturers of felts for paper and pulp mills and with the manufacturers of paper machine wires in the development of the standards of manufacture and practices in their use.

Crystal Tissue Co. Appeals Judgment for $9,370

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, August 28, 1922.—The Crystal Tissue Company, of Middletown, has filed an appeal in the United States District Court of Appeals against a judgment of $9,370 rendered against it in the Federal Court in favor of the Robertson Company, of Bellows Falls, Vt.

Breach of contract had been charged by the Vermont concern.

XUM

DETERMINATION OF THE CELLULOSE CONTENT OF WOOD BY THE ACTION OF CHLORINE IN CARBON TETRACHLORIDE*

EMIL HEUSER AND H. CASSEUS

The determination of the cellulose content of cellulosic raw materials is usually carried out by Cross and Bevan's method. The basis of this method is the removal of the lignin and other non-cellulosic materials of the wood by means of chlorine gas. The resulting "lignin chloride" is dissolved out of alkalies or neutral sulphite solution, leaving the celluose as a residue; this cellulose, however, still contains most of the pentosans. In connection with the investigations of Cross and Bevan, Heuser and Sieber (*Z. angew. Chem.*, 1913, 801) carried out a number of experiments on spruce wood, in which they followed the course of the reaction of the chlorine and at the same time pointed out some of the difficulties of the method. The principal objection to the method is that it is difficult to bring about an equal penetration of the cellulosic material by the chlorine. The result is that certain portions of the sample are liable to overchlorination, while others are not sufficiently acted upon by the gas. It therefore seemed desirable to so modify the method that the chlorine acted upon the wood or other material in a diluted condition.

Such a method is protected by A. Franz in Ger. Pat. 323,936, in which he treats wood and other cellulosic materials with chlorine dissolved in carbon tetrachloride.

We have used this method for the determination of the cellulose content of wood.

The solution of chlorine in carbon tetrachloride was prepared by passing the chlorine gas from a steel cylinder into the solvent until it was saturated, determining on the one hand the increase in weight of the solution and, on the other, the chlorine content of the solution, after dilution of a sample with water, by means of an excess of potassium iodide solution, the iodine which was liberated being titrated with sodium thiosulphate solution. This solution of chlorine in carbon tetrachloride, if kept in a closed flask, and protected from light and heat, is stable for a considerable period of time. In the course of four weeks the chlorine content had decreased only by 3 to 4 per cent. The chlorine content of the freshly saturated solution was found to be 8.10 grams per 100 grams carbon tetrachloride. The content, after standing 1, 2, 3 and 4 weeks respectively, at room temperature, was found to be 8.02, 7.95, 7.88 and 7.80 per cent.

The wood (spruce) was first tested in the dried condition, coarse, moderately fine, and fine wood meal being used in amounts varying from 1 to 1.5 grams. The moderately fine meal was found to be most suitable, since the fine was difficult of filtration, while the coarse required too long a reaction time. The course of the reaction with the three kinds of samples is seen from the following table:

	Coarse	Moderately Fine	Fine
Chlorine consumption after	%	%	%
1 hr.	9.54	10.17	10.62
3 hrs.	12.82	13.41	13.76
6 hrs.	15.56	15.84	15.98
10 hrs.	2.92	1.40	0.71
10.5 hrs.	0.07	0.08	0.00
Decrease in weight after			
1 hr.	8.33	9.48	10.21
3 hrs.	12.47	13.77	13.95
6 hrs.	15.38	15.82	16.05
10 hrs.	4.40	1.51	0.58
10.5 hrs.	0.04	0.08	0.01
Total decrease in weight	40.62	40.66	40.80
Yield of crude cellulose	59.39	59.34	59.20

This table shows that the loss in weight reaches its highest point after 6 hours of chlorination. At the end of 10 hours the value is so small that the reaction can be considered as being ended. The chlorine consumption follows a similar curve, which indicates that, in all probability, only the lignin is being attacked by the chlorine.

The above reaction was carried out on material which had been freed from fats, resins and waxes by extraction with benzene-alcohol (1:1) in a soxhlet apparatus. 1.2 to 1.5 grams of this material was placed in a powder flask, 50 cc. of the saturated chlorine solution added, the stopper securely fastened in the flask and the whole shaken on a shaking machine.

In working up the reaction product, where it was desired to determine the total chlorine consumed, the chlorinated fiber was filtered by means of a suction pump, a wash bottle and two erlenmeyer flasks, each containing potassium iodide solution, were placed between the suction flask and the pump. The liberated iodine was titrated with 0.5 normal sodium thiosulphate. The fiber mass remaining on the filter was first washed with carbon tetrachloride and then with a little alcohol and finally with water. The filtrate was then shaken with water and freed from carbon tetrachloride in a separatory funnel. This was again shaken with water, in order to completely remove the chlorine; upon combining the water extracts, they are made up to a definite volume and the chlorine content determined. The sum of the two determinations gives the total recovered chlorine and the difference of this figure and the chlorine introduced into the flask gives the chlorine consumed.

The fibrous mass is worked up in the usual way, that is, by washing with 2 per cent sodium sulphite solution, the removal of this with water, bleaching with permanganate solution and washing with sulphurous acid, finally drying and weighing the fiber.

The time required for a determination by this method (approximately 10 hours) was so long that it was necessary to find means of decreasing it. The first attempt was by carrying out the reaction in a flask, fitted with a stirrer (carbon tetrachloride was used as a seal to prevent the escape of chlorine) and exposed to the rays from a 50-watt Osram lamp. In general the course of the reaction was the same as that found when a shaking machine was used.

A much more effective means of decreasing the time of the reaction was discovered in the experiments with moist samples. Using the moisture content suggested by Schwalbe-Sieber, three chlorinations (30 minutes, 20 minutes and 15 minutes) were sufficient to produce a similar decrease in weight as obtained after 10 hours on a dry sample. Using a sample of 1.2753 grams, the decrease in weight was found to be:

	Grams
After 30 minutes	0.3024
After 50 minutes	0.1870
After 65 minutes	0.0262
Total loss in weight	0.5156
Yield of cellulose	59.57 per cent.

The crude cellulose obtained by this procedure is perfectly white, with no dark stains, while that obtained by direct chlorination, after

*Abstracted from Der Papierfabrikant, Fest. und Auslandheft, 1922, 80-93, by Clarence J. West.

XUM

four treatments of the material, shows a certain amount of these dark places and are removed only by a further chlorination. This is probably due to the fact that, especially in the case of the fine samples, the material packs so tightly together on filtration that it is not readily attacked during the further chlorinations. In such cases it is necessary to break up the mass with a glass rod before chlorination.

Other Advantages

A further marked advantage of the proposed method is that the preliminary extraction of fat, etc., is unnecessary. Since the chlorine is used in a carbon tetrachloride solution, it was assumed that, because it is known that carbon tetrachloride is a good solvent for these substances, a considerable amount would be removed during the chlorination process. Experiment confirmed this assumption. The chlorination of non-extracted wood meal, in the above described method (shaking the moist meal three times with chlorine-carbon tetrachloride) gave the same value for the crude cellulose content as were obtained with the extracted meal. Thus, using a sample of moderately fine meal, 1.86 per cent of resins and fats and 59.72 per cent crude cellulose were found. The crude cellulose thus obtained was further examined for its fat and resin content; the results showed 0.16 to 0.19 per cent. A sample of extracted meal gave a crude cellulose which contained from 0.08 to 0.10 per cent resin and fat. This shows that there is little difference between the resin and fat contents of the crude cellulose from the two methods and that, therefore, it is unnecessary to remove these by a preliminary extraction of the sample.

A Time Saving Apparatus

In order to avoid the time-consuming transference of the chlorinated mass from the shaking vessel to the gooch crucible (which is always accompanied by some loss), and from this to the shaking vessel again, a reaction vessel has been constructed which has a ground cover and a glass stop cock with a wide bore opening. When the reaction is started the stop cock is closed and the gooch crucible removed from the flask. At the close of the reaction the vessel is placed upon the crucible, the stop cock opened and the reaction product allowed to flow through onto the crucible. The vessel is washed out with carbon tetrachloride, the larger portions of the sample being pushed through with a thin glass rod. After washing out with water, the reaction vessel may be removed and the product in the crucible worked up in the usual way. At the beginning of the second period of the chlorination the fiber in the crucible may be transferred to the reaction vessel by inverting the apparatus and washing the fiber through the stop cock by means of water. At the end of the chlorination, the crude fiber is dried in the crucible and weighed. Working with this apparatus is considerably simpler and time-saving. The resulting crude cellulose is pure white, free of lignin and scarcely attacked by chlorine, if at all.

Purity of the Cellulose Preparations

Various samples of crude cellulose, obtained by the several methods outlined above, were tested for pentosan and ash contents. Tollens and Kroeber's method was used, in which distillation with 12 per cent hydrochloric acid gave furfural, which was weighed as the phloroglucid and calculated to pentosan. The moderately fine meal, shaken with chlorine-carbon tetrachloride in the moist state, gave 2.98 per cent pentosans; the cellulose value, corrected for this pentosan content, gave 56.65 per cent as the true (pure) cellulose content. Other samples varied from 3.04 to 3.56 per cent pentosan, or from 55.72 to 56.65 per cent true cellulose. The ash content of the various samples varied from 0.039 to 0.058 per cent.

Lignin and Oxycellulose Content

Various color methods were used to test for the degree of digestion of the various samples. By the application of phloroglucinol-hydrochloric acid to a lignified fiber, a more or less deep red color is obtained, while by using aniline sulphate a light yellow coloration results. Maule's reaction was also used; this consists in treating the fiber with 0.1 normal permanganate solution for 5-10 minutes, washing this out with water, dissolving the manganese dioxide out with sulphurous acid, washing again and finally treating with concentrated ammonia water. In the presence of lignin a red coloration is seen. Tested by these methods, no trace of lignin was found in the crude cellulose preparations.

The oxycellulose content of crude cellulose preparations obtained by the direct method and the new method was compared by testing the action of a solution of methylene blue (0.5 gram in 1000 cc. water) upon the fibers. The coloration obtained in the case of the direct method was much more marked than that observed in the fibers by the new method.

Microscopic tests, using staining methods with zinc chloro-iodide and methylene blue as well as malachite green gave results confirming the microscopic tests.

The final test applied was the determination of the copper number. A sample of crude cellulose prepared by direct chlorination showed a copper number of 3.20 per cent, while that prepared by chlorination in carbon tetrachloride solution had a copper number of 0.85. This result shows that the cellulose is attacked considerably more in the direct method than in the new method.

TECHNICAL SECTION, PAGE 104

Paper Testing Methods and Apparatus

The Committee on Paper Testing under the chairmanship of Frederick A. Curtis, Chief of the Paper Section, Bureau of Standards, Washington, D. C., is arranging through the Office of the Secretary to submit a questionnaire on Paper Testing Methods and Apparatus to all members of the Association.

The questionnaire is appended herewith and replies from individuals and companies not connected with the Technical Association will be welcomed. They may be sent either to Mr. Curtis or to the Secretary, 18 East 41st street, N. Y. C.

QUESTIONNAIRE

1. WEIGHT.—What type and make of scale or balance do you use? and how many? What is its accuracy?

2. BURSTING STRENGTH.—Do you use a Mullen, Ashcroft, Webb, or some other type? and how many? How often do you test the gages and change diaphragms

3. THICKNESS.—What type of dial micrometer do you use? and how many? What is its accuracy?

4. FOLDING ENDURANCE.—Have you a folding tester? and how many? what kinds? on what grades? Do you use it?

5. BREAKING OR TENSILE STRENGTH.—Do you have a Schopper, Scott, Perkins or some other tester? and how many? On what grades do you use it? What is its accuracy?

6. ABSORPTION.—What method and apparatus do you use for absorption of water in slack-sized or bibulous papers?

7. OPACITY OR TRANSPARENCY.—Are you equipped to measure opacity? With what apparatus?

8. TEARING STRENGTH.—Do you use the Case, Schopper, Thwing, Elmendorf, Witham or some other apparatus? On what grades do you use it? What is your criticism of the tester you use?

9. SIZING QUALITY.—Do you use the ink flotation, Okell electrolytic method, Valley size tester, curl method or some other method? Have you any special apparatus for this test? How useful and important is this test?

10. FINISH.—What apparatus do you use? On what grades? Is it satisfactory?

11. WATER PROOF QUALITIES.—Do you make any tests to determine the water-resisting quality of paper? What method do you use?

12. FIBER COMPOSITION.—Are you equipped to make this test? Do you use the count, estimation or some other method?

XUM

A DICTIONARY OF PAPER TERMS

(*Continued from the issue of June 29, 1922*)

Profile Paper. Drawing paper on which accurately spaced lines are printed; used by draftsmen for drawing to scale or for graphic representation of statistics.

Programme. Paper largely poplar or esparto, for use as name implies. Should be soft and free from rattle.

Prussian Blue. See Berlin Blue.

Pulp. The mass of cellulose fibers after elimination of non-cellulose material from wood by chemical means. The fibrous mass resulting from the disintegration of wood mechanically. The term is used for the slush stock containing much water; also for the wet or nearly dry products resulting from pressing or otherwise removing water. Also used in referring to the mass after treatment of old papers by a pulper.

Pulper. Generally refers to some form of mechanical disintegrator for old papers or broke. There are two types: intermittent or kneader type and continuous. See Perfect Pulper.

Pulp Saver. See Save-All.

Pulpwood. Kinds of wood adapted to papermaking. Such wood as sold or cut either in blocks or whole logs.

Pyrites. Mineral sulphides. Iron pyrites has been used as a source of sulphur for sulphite pulp-making. When heated in a current of air sulphur dioxide is produced.

Pyrocotton. Nitrated cellulose, containing 12.5 per cent. nitrogen, hence not so fully nitrated as guncotton. It is used in the manufacture of smokeless powder, photographic films, airplant dope, celluloid and lacquers. It is soluble in a mixture of ether and alcohol.

Pyroxylin. Nitrated cotton or paper. See Pyrocotton.

Q

Quired Paper. Paper folded and separated into quires.

Quire. The twentieth part of a ream: therefore 24 sheets when the ream is 480, and 25 sheets when the ream is 500.

Quicklime. See Lime.

Quercus. Latin word for Oak. The white and red oaks. *Quercus alba* and *rubra* have been cooked experimentally by soda process. They are hard to cook and the pulp is bleached with difficulty.

Quercitron. A yellow coloring matter obtained from the bark of a species of oak. *Quercus coccinea,* variety tinctoria.

Quarto—Abbreviation 4to. The resultant sheet when a sheet of paper is folded or cut into four parts.

Quaker Colors. Dull effects produced by modifying the brighter shades—sometimes by adding black.

R

Race. The water channel immediately above the intake to water-wheels or penstocks or at the discharge from same.

Racing. Uncontrolled action of an engine resulting from failure of governor or similar action of a water-wheel by the removal of the load.

Rack and Pinion. A device for changing circular motion into linear. The rack is a bar fitted with teeth which those of the pinion engage.

Radiation. A term referring to the sending out of energy from a body. Light and heat are the most familiar forms; other forms are the rays emitted from radio active substances such as radium, thorium.

Radical. In chemistry a group of elements which acts in many ways like a single element, though it does not exist outside of compounds. e. g. Hydroxyl—OH. Methyl—CH_3. Carboxyl—COOH.

Rag. Paper stock prepared from rags—chiefly cotton. Linen rags are not sorted out so largely in America as in Europe.

Rags. A raw material for paper—once the principal source; now chiefly used in the highest grades of writing papers, blottings and parchment stocks—white rags requiring less treatment bring higher prices than soiled or colored rags which must be bleached and decolored.

Rag Willow. A machine for dusting rags which have been sorted and cut up. It consists of a revolving screen provided with spikes which assist to some extent in the further disintegration of the rags which pass through the machine.

Railway Buffs. Printing paper used for advice sheets and circulars.

Ramie. *Boehmeria nivea,* a plant of the nettle family found in India and China; hence called *Chinese grass.* It is used in textiles; may be found in paper by way of rags. Also called *Rhea.*

Ratchet. A toothed wheel, whose teeth are so shaped that a pawl will slip over them when the wheel revolves in one direction, and engage them to prevent travel in opposite direction. See Pawl.

Ratio. The relation between two magnitudes or quantities of the same kind. It is expressed by stating what multiple part or parts one quantity is of the other.

The ratio of A to B for instance may be written A:B or A/B.

Raw Materials. The various substances used to make up any finished goods.

Wood, rags, wood pulp, alum, rosin, china clay, etc., are raw materials for papermaking. Soda, sulphur, limestone, coal, etc., are not properly raw materials for this industry, as they are not incorporated as such in paper, the finished article.

Reaction. (1) A change brought about by chemical action.

(2) In mechanics, a force acting in opposition to another force or system of forces.

Reagent. Any chemical compound which gives rise to a reaction or chemical change.

Ream. The unit of paper quantity. Reams formerly consisted of twenty quires of 24 sheets each, making 480 sheets. Now, more commonly 500 sheets are in a ream, with 25 sheets to the quire. A printer's ream is 516 sheets, 21½ quires of 24 sheets. A standard ream is 500 sheets 25 x 40 inches, or 500,000 square inches.

Reaumur. See Thermometers.

Rechipper. A machine used in a chemical pulp mill for reducing oversize chips and splinters to the required size. A revolving disc with knife blades at its periphery in a case, or a cylinder with pivoted fingers of steel attached to the periphery, either cutting or breaking the oversize.

Reciprocating. Machinery operating by a backward and forward movement, as in the ordinary steam engine, as contrasted with the rotary motion of the turbine engine.

Recovered Sulphur. Sulphur recovered from alkali wastes, depending on the reaction applied by Chance wherein carbon

TECHNICAL SECTION, PAGE 105

XUM

dioxide displaces hydrogen sulphide. Often called "Chance Sulphur."

Recovery. In a sulphite mill the procedure whereby sulphur dioxide liberated by heat in the digester is salvaged. It is "relieved" through water-cooled pipes to a tower where it is absorbed in water and blended with freshly made acid or absorbed directly in a tank of acid. The system used in a sulphate or soda pulp mill whereby the chemicals used in digesting the pulp are obtained in a form for reuse.

Rectification. (1) To purify by a second distillation, as in the case of alcohol, which is called rectified spirits of wine, abbreviated to S. V. R. for Spiritus Vini Rectificatus, and has a strength of about 90 per cent of alcohol by weight.

(2) In electricity the conversion of an alternating to a direct or continuous current.

Red Lead. Sometimes called minium—an oxide of lead approximately Pb_3O_4, but not of uniform composition. It has a specific gravity of 8.62, mixes well with linseed oil and dries quickly. It makes a good protective coat for structural steel. Used much for pipe jointing.

Red Oils. See Turkey Red Oils.

Redwood. *Sequoia semper virens.* A tree growing to a great height and girth, found on the Southern Pacific coast of North America. May be cooked for pulp by either sulphite or sulphate processes. Fiber is longer than spruce. The stock, which has only been cooked experimentally is not readily bleached. The bark is used in roofing paper.

Reducing Agents. Substances which are oxidized at the expense of oxygen or oxides, being themselves usually oxidized, as in the case of carbon which is used generally in recovering metals from their ores.

Reducing Valve. A valve so constructed that when placed on pipe line transporting a liquid or gas the pressure is reduced after passing the valve.

Reel. The revolving frame or drum which receives and winds up the paper coming off the machine, and from which the paper is unwound by the winder as it produces the finished rolls. This is necessary, as the machine runs continuously and the reels take care of the output while the finished rolls are being removed from the winder.

Refiner.

Refining Engine. There are several different forms of this apparatus named after patentees or designers. Its function is to eliminate knots or tangled bunches of fibers, and to bring about a closer relation between the fibers, filler, size and color. Mill men in America usually refer to this apparatus as the "jordan," irrespective of the design. It consists of a cone-shaped hollow casting called the shell, into which a cone-shaped plug is fitted. The inner surface of the shell and the outer surface of the plug are fitted with radially disposed bars usually with wood fillers to hold them in place, as in the beater-roll,—except that these converge to the apex of the cone. The plug revolves on a shaft at the axis of the cone, and to maintain the proper contact with the shell can be moved horizontally, by a handwheel. The stock is fed in at the apex of the cone, and is delivered by centrifugal force assisted by gravity at the base.

Refraction. The change of direction experienced by a ray of light in passing from one medium to another of different density. Similarly the change of direction on lines of flow of electric currents passing from one conducting medium to another of differing conductivity.

Refractory. Substances which fuse only at very high temperatures, such as fire clay, fire brick, lime, calcined magnesia, etc. Used for furnace linings.

Register. The relation of impression on a sheet after passing through the printing or lithographing press, to succeeding impressions of different colors.

Regulating Box. See Flow Box.

Relative Humidity. See Humidity.

Relief. The lowering of pressure by opening valves, permitting gas or liquor to escape either into the air or into the recovery system as in sulphite mill.

The period during which digesters are being relieved into the recovery system.

Relay. An electric device whereby a small current is used to operate a magnet, causing the opening of a switch or closing of a circuit to bring a more powerful current into action.

Repped or Ribbed Paper. Fancy paper having its special effect imparted by steel rollers.

Resin. There are a number of resins, which may be defined loosely as any exudation from a tree, insoluble in water. Rosin.

Resorcin.

Resorcinol. Metadioxybenzene. A white crystalline compound used in the manufacture of dyes.

Retting or Rotting. The process of steeping flax or other vegetable in water to remove soluble mucilaginous material.

Retrees. Paper culled from the best grades, sold at lower price, seconds, from French *retiree*, withdrawn.

Return Wire Rolls. Brass or brass covered rolls carrying the machine wire back from the couch to the breast roll and adjusted to maintain the desired tension on the wire.

Rewinder. A machine for making finished rolls of special size from the rolls coming from the paper machine.

Reversible Reaction. Reactions which may proceed in either direction, depending on conditions.

Sulphur dioxide passed into dilute solution of iodine produces sulphuric acid and hydriodic acid, but if strong sulphuric acid be added to strong hydriodic acid, the reaction is reversed, giving sulphur dioxide and iodine. Such reactions are usually indicated by the sign $\rightleftharpoons$ The above would be

$$SO_2 + 2\ H_2O + I_2 \rightleftharpoons H_2SO_4 + 2\ HI$$

Revolving Boiler. See Rotary.

Revolving Burner. See Sulphur Burning.

Revolving Screen. See Screens.

Rhea. See Ramie.

Rheostat. An electric instrument containing units of metal so arranged that when it is placed in circuit, the resistance may be increased or diminished.

Rhodamines. Dyes formed by the condensation of meta amido phenol and some of its derivatives with anhydrides of dibasic acids such as succinic.

Riffle. A trough or spout the bottom of which may be covered with cocoanut matting or other fabric or divided by transverse bars, designed to permit sand or other dirt of higher specific gravity than the stock flowing through it to settle to the floor.

Right-Handed Screw. The normal form of screw. When the axis is vertical the thread runs upward from left to right.

Riser. (1) The vertical part of a step.

(2) A main pipe carrying water, steam or stock from one floor to others above.

(3) An opening in a mold whereby air leaves the cavity as metal is poured in, when the liquid metal shows in the riser, the mold is full.

(4) The metal or wooden block upon which stereo plates are mounted to make them "type high."

XUM

Rising Gate.

Rising Main. See Riser.

Rolling Friction. The friction of a wheel rolling along a smooth surface.
See Sliding Friction.

Roofing. Heavy wood pulp or rag papers impregnated with asphalt, tar or creosote.

Rosaniline. R-hydrochloride or r-acetate are used as dyes under this name and also magenta and fuchsine.

Rosin. The solid residue left after distilling turpentine from the exudation obtained by cutting or "boxing" the Southern long-leaved pine. It consists mostly of abietic acid and when this is combined with soda, a soap is formed which is the basis of rosin size.

Rosin Size. A semi-solid mass composed of water, rosin soap and free rosin. When this is treated with water—emulsified—it forms a white liquid known as size milk which is then added to the stock, giving the paper water- and ink-resisting qualities.

Rossing. Removal of bark from pulpwood by mechanical means before shipping to pulp mill. Usually understood to be by knife barkers; when by drum barkers termed "drum roosed"; "sap peeled" when bark is removed with a "spud" during the season when the bark slips.

Rot. (1) The result of chemical action bringing about decay.
(2) A result of the action of certain fungi upon wood or cellulose. The fungus removes the elements of water in its development and the dehydrated fibers become brittle and appear dry and powdery, hence such action is usually called dry rot.

Rotary Boiler. A cylinder in which to cook rags or old papers. It is revolved on its long axis by a geared drive and steam is admitted through the trunnion. The stock is loaded and discharged through one or more man-holes. Cf. Globe rotary.

Rotary Burner. See Sulphur Burning.

Rotary Pump. A form of pump which propels liquids by paddles or volutes in a shell shaped casting. The liquid entering at the axis is thrown to the outer side of a spiral tangentially and is thus thrown to the points of use through pipes. There are other forms.

Rotary Screen. See Screens.

Roll. See Beater, Couch, Press, Pony, Sweat.

Roll Bar—Fly Bar. See Beater.

Rope. Paper stock from used material consisting of manila, sisal, jute or hemp.

Rope Browns. Brown wrapping made from rope stock, expected therefore to be of high quality and strength.

Royal. See Sizes of Paper.

S

Safety Paper. For checks or other financial use, on which erasure cannot be made without its being apparent.

Safranine. An aniline dye, very sensitive to light, used in making pink papers of the lower grades.

Sal Ammoniac. See Ammonium Chloride.

Saleratus (Salaeratus). See Sodium Bicarbonate.

Sal Soda. See Sodium Carbonate.

Sal Volatile. See Ammonium Carbonate.

Sand Trap. A device in the beater to collect grit and fine dirt of higher specific gravity than the stock. It is sometimes placed in flow boxes for the same purpose. It consists of a shallow trough extending across the bottom of the beater a short distance in front of the roll and covered with a screen plate. A device placed at the inlet of the jordan to remove heavy foreign materials that may be in the stock.

Sap Wood (of a Tree). The outer rings of recent growth called the *alburnum*, containing the sap, in distinction from the heart wood.

Save All. (1) Of fourdrinier machine, the shallow pans of wood or metal placed under the table rolls next to the breast roll and sometimes extending toward the suction boxes. They serve to catch the machine backwater draining from the wire and direct it to the fan pump where it is mixed with the fresh stock or into the pit under the wire part.

(2) Apparatus designed to recover from mill effluent, material held in suspension. They are of two general types, sedimentation tanks and strainers. The former are used chiefly in recovering paper loading material as well as fiber while the latter serve mainly for fiber and other comparatively coarse material. There are many different designs of both types, and a large number have been patented. Among the best known mechanical save-alls are the Fullner, Impco pneumatic, North, Bird, Witham, and Woods.

Savery Joint. One of the various forms of steam joints forming the connection of the steam and exhaust headers with the journal of the drier by which steam is admitted and the condensation emitted.—From its inventor.

Saw Deck. The platform in which the slasher saws of a cut up mill are placed and over which the feed chains travel carrying the logs to be cut into blocks.

Schweitzer's Reagent. A solution of copper hydrate in ammonia water. It dissolves cellulose and is therefore used in laboratory investigations. Used to some extent in the manufacture of artificial silk.

Score Cutter. A type of slitter consisting of a metal disc with its edge revolving against the face of a hardened steel cylinder over which the paper web passes in being formed into rolls. It is thereby slit into the desired widths. See Slitters.

Screens. Apparatus designed in general for classifying material according to size. Stock screens for paper and pulp are of two general types, (I) Flat and (II) Revolving.

(I) Flat screens are of various mechanical design. The best known are either diaphragm or oscillating. In both they consist essentially of a shallow vat, the false bottom of which forms the screening surface and is composed of brass or bronze slotted plates. In operation the fiber is sucked or washed through the slots of the plates while the coarser material is retained and thereby removed from the stock. Such screens are used mostly in sulphite mills and on paper machines.

(II) Revolving screens according to the operation may be either (1) rotating or (2) centrifugal both of which vary greatly in design and mode of operation.

(1) Rotating screens may be either of the inflow or outward flow type depending on the movement of the stock. They consist essentially of cylindrical frames rotated in a horizontal position and may be covered with removable curved plates slotted similarly to the plates of flat screens. They are of many designs and are largely used in connection with paper machines and to some extent on chemical pulp. (2) Centrifugal screens. These again are of varied design but consist essentially of a horizontal or vertical cylinder of perforated brass or copper inside of which the stock is fed and thrown by means of a revolving fan against the interior of the perforated screen. The coarser material is retained and continuously removed

XUM

while the finer stock passes through the perforations. They are used very largely for screening mechanical pulp and to a large extent for chemical pulp.

Screws. Scraps of hide dried and bundled together. Bought by paper mills that make their own gelatine size. Term not used in America.

Scrubber. An apparatus designed to remove impurities from a gas preliminary to its absorption. Used with pyrites burners but not customary when sulphur is used.

Self Colored. A term employed to signify that no coloring matter has been added to the pulp. More often the term natural is used.

Sensitized Paper. Paper made for photographic or chemical work rendered sensitive by coating or dipping in some fluid which reacts to light. See blue print paper. Such papers must be made of long fibered stock and well sized to prevent disintegration in the washing bath used in development.

Shake. (1) The horizontal lateral motion of the breast roll end of the fourdrinier part of a paper machine.

(2) The vertical motion imparted to the diaphragm in the case of flat screens or to the cylinder or vat in the case of rotary screens.

Sheet Calendering. Calendering of sheets in distinction to a web. It is only done in special cases or for special effects.

Shell. The outer metal casing of refining engines, digesters, boilers, etc.

Shell Bars. The bars attached to the interior of the shell of a refining engine. The shell bars are thus fixed and across them laterally the core or plug revolves. See refining engine.

Shiners. Or shine spots—particles of filler, sodium silicate, calcium sulphate or other substances which are compressed to a translucent spot upon passage of the paper through the calenders. Hard brittle materials fall out and make pinholes. In sulphite pulp, the bundles of fibers seen in undercooked pulp.

Shives. Slivers of wood or hard much undercooked fiber bundles showing in sheets of pulp or in finished paper. Refers mostly to mechanical pulp and rope stock when insufficiently reduced.

Shrinkage. (1) Loss of materials in the course of mill operations. (2) Loss of weight or volume in handling or transit, usually due to change of moisture condition.

Silver Tissue. Tissue paper used for wrapping silver, made of rag or wood pulp, free from acid and sulphur compounds. Non tarnish.

Sisal Hemp. A Mexican variety of aloe, *Agave Americana,* Twine is made from the fibers of this plant, and it is therefore sometimes found in paper stocks. On account of the hard wire-like fiber it is greatly to be avoided.

Size. A substance added to paper stock or applied to paper to render it resistant to the absorption of water. Many substances have this effect among which are starch preparations, silicate of soda, glue and water soluble rosin compounds, the last two being most widely used. Glue is used in high grade writings and paper of similar quality, while rosin size is used in all other grades that require water resistance.

Sizing. In paper making. Treatment which results in making paper more or less resistant to the absorption of water. Sizing has the effect also of adding to the strength of paper by increasing the friction between the fibers. The sizing compound is either rosin size added to the beater (engine sizing) or glue solution applied to the surface of the dried sheet by passing it through a vat (top or tub sizing). Other materials are also used in both methods.

Size Cutting. The process of combining alkali (soda) with rosin in making rosin size.

Slack. Loose—not under strain.

Slack Sized. Paper in which very little size has been used or in which there is a low degree of water resistance.

Slake. Often incorrectly written "slack." To add water as in the case of lime.

Slaked Line. Calcium hydrate (or hydroxide) the result of treating quickline with water. Lime is sometimes said to be "air" slaked, in which case both carbonate and hydrate are formed on exposure to the air by reaction with the carbon dioxide and moisture in the atmosphere. Hydrated lime is dry slaked lime.

Slasher. A gang of circular saws with traveling feed chains set in a suitable platform for cutting logs into blocks. May refer to a set of band saws serving the same purpose.

Slice. A vertically disposed plate extending across the wire, placed directly over, or a short distance in front of the breast roll. Its function is to regulate the thickness of the stream of diluted half stuff flowing on to the wire, and to maintain a satisfactory depth of pond (which see) whereby to control the velocity of the flow. There are sometimes two or more slices to produce certain effects in the formation of the sheet.

Sliding Friction. The friction in ordinary bearings. Sliding friction is greater than rolling friction, hence the use of ball and roller bearings.

Slipped Roll. A roll of paper tending to slip off its core or which has had its core pushed out carrying the roll to a cone shape or "pencil point."

Slitters. Knife edged discs (top slitter, bottom slitter) mounted at the winder of the paper machine, movable horizontally, used to cut the web to the required width as it runs off the reel. Also refers to special apparatus for cutting and rewinding and are of several designs. See Score Cutter.

Sliver Screen. The coarse screen in the mechanical pulp mill over which passes the pulp from the grinders to remove the coarse material or slivers. Bull screen.

Slivers. Small particles of uncooked wood in mechanical or chemical pulp, also long, ribbon-like chips formed by a glancing stroke of the chipper knife on the under side of the block indicating, when numerous and long, that there is excessive clearance between chipper disc and bedknife or that the bedknife requires sharpening.

Slow. Paper stock is said to be slow when as the result of long beating or other treatment in process, it parts with its water slowly on running over the machine wire.

Slush. Pulp suspended in water, which after being screened is thickened but to a fluid density at which it can be pumped.

Smalts. A pigment obtained by grinding a blue glass, which has been coloured with cobalt silicate. The colour is very permanent, but the pigment is of low coloring power.

Soapstone. A mineral occurring massive in nature, composed largely of hydrated silicate of magnesia—largely used in block form as the lining of the smelting furnace of the recovery system of a sulphate mill (Alberene). In slab form as table tops and sinks in laboratories. When pulverized if free from grit and of a white color it is used as a paper filler. (Tale, Asbestine.)

(To be continued)

XUM

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and and Finished Products

Giant Grasses for Paper Making.—Bull. Imp. Inst., xix, 174-189 (1921; *Chem. Abs.*, xvi, 1315 (April 20, 1922).—Grasses affording possibilities as paper making materials may be divided into three classes: the smaller, such as cereal straws and esparto; the heaviest, such as the bamboos; and an intermidate class of large-stemmed grasses. The article summarizes the work done on the third class and considers species belonging to 40 genera and to 9 tribes of the order Gramineæ.—A. P.-C.

Sulphur and Sulphur Burners.—H. E. Weston. *Paper Ind.*, iv, 90-94 (April, 1922).—A general description of the mode of occurrence, method of extraction and chemistry of sulphur, and of flat, rotary, and vertical sulphur burners.—A. P.-C.

Fastness of Dyestuffs.—Paul De Guehery. *Paper Ind.*, iii, 1382-1385 (Jan., 1922).—A discussion of the fastness of dyestuffs (more particularly from a paper making point of view) to light, to washing, to alkali and acids, and to heat, with a description of the method of testing the light fastness.—A. P.-C.

Strength and Resistance of Paper—Breaking Length.—E. Arnould. *Papier*, xxv, 209-212 (May, 1922).—A discussion of the factors affecting the tensile strength of paper, of the precautions to be taken in testing tensile strength by the Schopper tester, and of the strength tests to be applied to various grades of paper.—A. P.-C.

Forestry

Paper Making Trees.—Ch. Groud. *Papier*, xxv, 200-203 (May, 1922).—Brief description of various trees suitable for the manufacture of paper pulp.—A. P.-C.

Wood Preparing and Equipment

Accident Hazards in the Wood Room.—D. B. Davies, Northern Paper Mills, *Paper Ind.*, iv, 69-72 (April, 1922).—Outline of the various dangers and hazards to be encountered in the wood room, with suggestions for eliminating or reducing them to a minimum.—A. P.-C.

Groundwood Manufacturing and Equipment

The Improved Lead Burr.—W. A. Munro. *Paper Ind.*, iii, 1391-1392 (Jan., 1922).—In this type of burr one end of the teeth is gradually tapered inward, leaving no abrupt shoulder at the end of the tooth, so that the rest of the tooth can freely enter and deepen the impression started by the tapered end without liability of breaking out the edges. This results in better patterning of the stone, double patterning or jumping the grove is very unlikely, the life of the burr is increased, and the quality and yield of groundwood are improved. (Compare next abstract.)—A. P.-C.

Pulp Stone Burr.—T. W. Ward and B. F. Mellen. Can. Patent 218,743, May 23, 1922; U. S. A. Patent 1,419,785, June 13, 1922.—The ends of the burr are tapered to such a degree as to allow the burr to travel across the face of the pulp stone without breaking out the edges of the impression so as to obtain a smooth print on the face of the stone.—A. P.-C.

Theoretical Cost of Grinding Wood.—Roger M. Kinzly. *Paper Ind.*, iii, 1519-1521 (Feb., 1922).—A discussion of the part played by pressure in the manufacture of groundwood at a profit or at a loss, showing the advantages of high pressure.—A. P.-C.

Elimination of Groundwood Mill Waste.—Ralph K. Pratt. *Paper Ind.*, iii, 1673-1679 (March, 1922).—The author briefly describes conditions in an actual groundwood mill and makes the following suggestions from the point of (1) more economical operation, and (2) avoiding river pollution. (1) Cut as many 24 inch blocks as possible from each log up to the last piece, which should be cut into approximately equal pieces not less than 12 inches nor more than 25 inches (54 x 28 inch grinders are used). See if more wood than necessary is knife barked. Use white water throughout the stock circulating system. Install decker save-alls to save pulp in wet machine white water and surplus circulating water due to fluctuating conditions. (2) Run the barking drum without water and burn the waste under the boiler. Collect and burn bull screen and knotter screen tailings. Install drainer tanks or press rolls to remove water from fine screen tailings and burn these tailings. Have sufficient save-all equipment and make it and the white water system as reliable as possible to avoid shut downs. If the water from the save-all system is objectionable in the river, sluice it to the sea (4 miles distant in this case.) The screen tailings could then go with the waste paper.—A. P.-C.

Bleaching of Groundwood.—*Industria della Carta; Papeterie*, xliv, 490-494 (June 10, 1922).—Brief description of the method of bleaching groundwood with SO_2 and of the apparatus used, with mention of the chief precautions required.—A. P.-C.

Acid Processes of Pulp Manufacture and Equipment

Determination of Soluble Sulphates as Sulphuric Acid in Sulphite Waste Liquor.—E. C. Sherrard and G. W. Blanco, Forest Products Lab., Madison, Wis. *Paper Ind.*, iv, 241-244 (May, 1922).—Various methods proposed for the determination of sulphuric acid in the presence of sulphurous acid are reviewed, and the authors then propose a method consisting essentially in boiling 25 cc. of liquor with about 55 cc. of water and 25 cc. of 25% hydrochloric acid (equivalent to about 16 cc. of concentrated acid) in a 250-cc. Soxhlet flask under a reflux condenser till all SO_2 has been driven off (usually about 45 to 60 minutes), carbon dioxide being passed through the flask during the whole period of boiling. The solution is filtered and the sulphuric acid precipitated with barium chloride as usual The top of the reflux condenser is connected to a Drexel wash bottle containing standard iodine solution, which is in turn connected to an erlenmeyer containing standard thiosulphate, so that the SO_2 evolved can be determined at the same time, if desired. It was found that on adding sulphuric acid to waste liquor, one part of SO_2 is liberated by 61 parts of sulphuric acid, that when approximately 200 parts of sulphuric acid are added to sulphite waste liquor 64.4% of the combined SO_2 is liberated, and that the residual combined is retained even in the presence of approximately 500 parts of sulphuric acid.—A. P.-C.

Alkaline Processes of Pulp Manufacture and Equipment

Concentration of Liquors by Evaporation.—James Holmes. *Chem Trade J.*, lxx, 1-2 (1922); *Chem. Abs.*, xvi, 1505 (May 10, 1922).—General discussion of heat losses, typical quadruple effect performances, and improvements in design, with special reference to the paper maker.—A. P.-C.

Pulp Treatment and Drying—Operation and Equipment

Continuous Automatic Washing of Wood Pulp.—H. A. Morrison. *Paper Ind.*, iii, 1375-1380 (Jan., 1922).—The author, after briefly outlining the pan and diffuser methods of washing brown stock in soda and kraft mills respectively, describes a method of continuous and automatic washing of pulp by means of a rotary vacuum filter, which has been in successful operation on a commercial scale for some time. The most important requirement is that the stock should be fed to the filter at a consistency of not over 1%, which is obtained by diluting the charge with filtered and undiluted liquor to a consistency of about 4%, and then further diluting a small portion of this continuously to about 1% and feeding to the filter. The advantages claimed for the method are: (1) Dilution

XUM

of evaporator feed liquor is reduced about 35% in a soda mill and about 20% in a kraft mill. (2) Wash room labor is decreased about 60%. (3) Soda losses are at least 75% less than in either pans or diffusers. (4) No fiber is lost in the evaporating liquor, and there are no shut downs for cleaning the evaporator tubes. (5) The evaporator liquor is maintained at a constant temperature and density, and is delivered to the evaporator at a uniform rate of flow. (6) Truly representative samples of washed pulp from which dependable soda loss figures are readily determined, are easily secured. (7) All operations are in full view and always subject to inspection. (8) The time that the pulp is in process is enormously decreased. (9) Thin sheet washing, positive contact of wash liquor and wash water through even distribution upon the pulp results in a nonvariable displacement of cook liquor throughout the mass of fiber treated. (10) Installation costs are less than for either diffuser or pan stations. (11) The capacity is extremely righ, a filter with 100 square feet cloth area handles 25 to 30 tons in 24 hours. (12) The filters operate automatically, eliminating irregularities and losses due to personal equation. (13) Bleach consumption is reduced 1% or more in soda mills, and alum size correspondingly decreased in kraft pulp before coloring. Further possible uses for vacuum filters in the pulp industry are: save-alls, wet machines, and washing and de-inking waste paper.—A. P.-C.

Paper Manufacturing and Equipment

Effects of Chemical Treatment and of Beating on Paper Pulps.—E. Arnould. *Papier*, xxv, 193-19 (May, 1922.)—A brief and general discussion.—A. P.-C.

The Wear of Machine Wires.—R. Marx and E. Mallett. *Papier Ind.*, iv, 65-69 (April, 1922).—Working on data obtained by J. Heess on a 65-inch machine making common wrapping, largely from dirty waste papers, over the course of several months, the authors show that the total production of the wire is proportioned to $\frac{mv}{0.014hv + 0.28m}$, in which m is the weight per unit area (in pounds D. C.), h is the total vacuum (in inches of mercury), and v is the velocity of the wire (in feet per minute). It is assumed that the wires wear out through normal causes. The relation between the drying effect of the suction boxes and the vacua maintained in them is briefly discussed.—A. P.-C.

Lost Technic of the Removal of Printer's Ink from News Print.—Paul Diergart. *Chem. Ztg.*, xlvi, 41-42 (1922); *Chem. Abs.*, xvi, 1505 (May 10, 1922).—Historical.—A. P.-C.

Calender.—French Patent 535,863, Carl Schurmann. *Papier*, xxv, 205-207 (May, 1922). Also U. S. A. patent 1,423,969, July 25, 1922.—Instead of having large top and bottom iron rolls with intermediate alternate paper or cotton and iron rolls, the large top and bottom rolls are of cotton or paper; the axes of the rolls instead of being directly above one another are slightly staggered, and the stack is driven from the second or fourth roll from the bottom instead of the first or third.—A. P.-C.

Machine for Cutting and Interfolding Sheets of Cigarette Paper.—French Patent 536,308, A. Grimonprez and H. Petit, Feb. 9, 1922. *Papier*, xv, 207-209 (May, 1922).—A. P.-C.

The Small Paper Mill's Finishing Room and Its Auxiliaries.—H. M. Grasselt. *Paper Ind.*, iv, 80-83 (April, 1922).—Hints on means for most efficient operation.—A. P.-C.

Heat Economies in the News Print Industry.—G. Haas. *Chem. Ztg.*, xlv, 1210-1212 (1921); *Chem. Abs.*, xvi, 1666 (May 20, 1922).—The author discusses the possibility of replacing the 10 per cent of chemical pulp in news print (which is prepared from pine) by the so-called brown pulp (prepared from Scotch pine). Since the yield is larger there would be a considerable saving in timber and also in steam used in the preparation of the amount of chemical pulp used at present. The annual saving in Germany is estimated at 500,000 solid cords of wood. Since the preparation of chemical pulp from a cord of wood requires 170 kilos of coal, the fuel saving would be very large. Digesters for the preparation of pulp are discussed.—A. P.-C.

General Equipment

Cotton Rope Drives.—J. M. Alison, Wm. Kenyon & Sons. *Paper Ind.*, iii, 1537-1539 (Feb. 1922).—A discussion of the merits of cotton ropes as compared with manila ropes, of the advantages of three-strand over four-strand ropes, of the advisability of using angular (not curved) grooves and of polishing the grooves.—A. P.-C.

Elimination of Waste in the Paper Industry Due to Poor Lighting.—H. T. Spaulding and R. A. Palmer, General Electric Co. *Paper Ind.*, iv, 61-64 (April 1922).—A discussion of the importance of proper lighting in the paper mill in increasing efficiency and cutting down cost of production.—A. P.-C.

The Steel Belt Conveyor in the Pulp Mill.—Harry Carlson. *Paper Ind.*, iii, 1385-1389 (Jan. 1922).—The author describes a steel belt conveyor made by the Sandvik Steel Works, in Sweden, and describes its application in Swedish pulp mills, showing its advantages.—A. P.-C.

Flue Gas Testers.—F. O. H. Binder. *Chem. Ztg.*, xlvi, 149-151 (1922); *Chem., Abs.*, xvi, 1340 (May 10, 1922).—Descriptions, with cuts, of (1) Schumacher's "Oekonometer," an apparatus in which the gas is weighed and the change in specific gravity due to varying amounts of carbon dioxide is recorded on a chart as $\%CO_2$; (2) Maihack's "Duplex-Mono," by means of which both the burned and unburned constituents of the gas are determined alternately, the first by direct absorption and the second by absorption after burning in a carbon monoxide furnace heated electrically; (3) the "Union gas tester," which depends on the relative friction resistance of the gas and air when passed through a narrow tube.—A. P.-C.

Power Generating and Equipment

Heat Economy at Peak Loads.—De Grahl. *Z. angew. Chem.*, xxxv, 105-107 (1922); *Chem. Abs.*, xvi., 1823 (June 10, 1922.)—Special mention is made of the use of steam accumulators in the form of large tanks filled with hot water. These tanks are so arranged with reducing and controlling valves that they absorb heat with an increase in pressure during periods of low steam consumption, returning it to the low pressure mains as flash steam during periods of heavy demand for low pressure steam. Curves showing the application of the system to a pulp and paper mill are given.—A. P.-C.

Electric Steam Boiler.—N. R. Forssblad. Can. Patent 220,013, June 27, 1922.—The electrodes are introduced through the bottom of the shell, instead of the top as usual. Better efficiency is claimed due to better circulation of the water, less agitation, and consequently dryer steam.—A. P.-C.

Rack Cleaning Device for Head Races.—I. W. Jones. Can. Patent 218,800, May 23, 1922.—A car mounted on a track runs along the top of the dam. It carries a rake mounted to reciprocate up and down over the grating. On the upward movement it gathers debris from the grating and dumps them into a canal which lies between the track and the upstream side of the dam, a current of water flowing through the canal carrying away the rubbish.—A. P.-C.

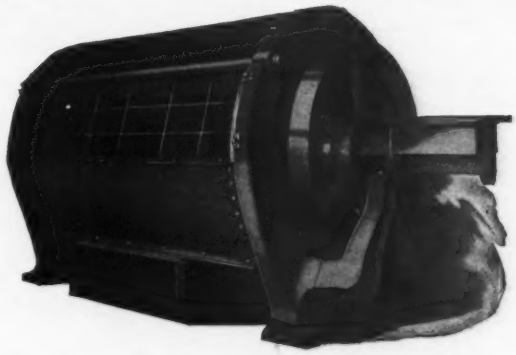
List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

Bull. Imp. Inst.	Bulletin of the Imperial Institute. John Murray, Albemarle St., W., London, England.
Chem. Abs.	Chemical Abstracts. E. J. Crane, Ohio State University, Columbus, Ohio.
Chem. Trade J.	Chemical Trade Journal and Chemical Engineer. Davis Bros., 265 Strand, London, W.C. 2, England.
Chem. Ztg.	Chemiker Zeitung. Walter Roth, Cöthen, Germany.
Industria della Carta.	L'Industria della Carta ed Arti Grafiche. Via Principe Umberto 24, Milan, Italy.
Paper Ind.	The Paper Industry. 356 Monadnock Block, Chicago, Ill.
Papeterie	La Papeterie. 9 Rue Lagrange, Paris (5°), France.
Papier	Le Papier. 16 Due du Rocher, Paris (8°), France.
Z. angew. Chem.	Zeitschrift für angewandte Chemie. Verlag für angewandte Chemie G.m.b.H., Nürnberger Str., 48, Leipzig, Germany.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low Power and Upkeep Expense



Delivers Rejections Free from Good Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

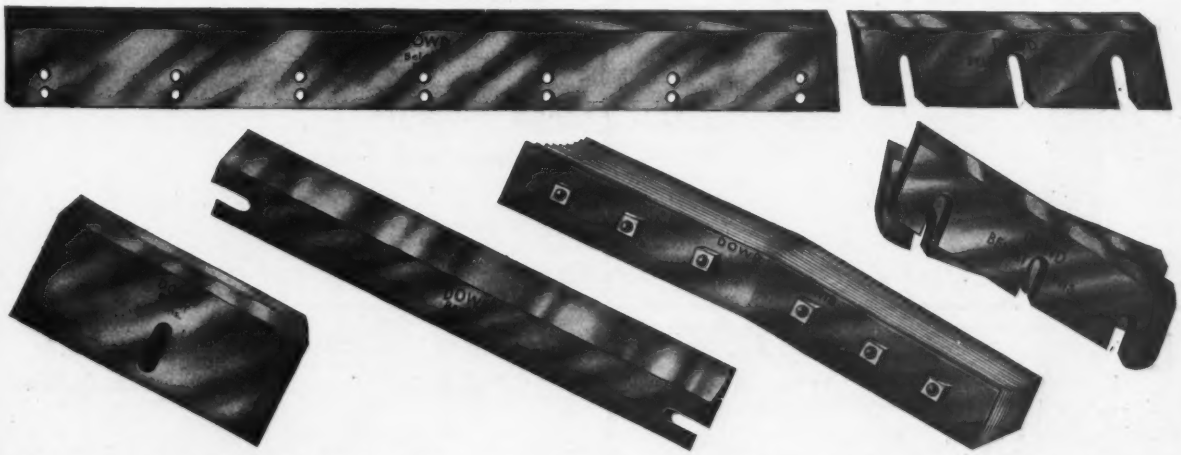
WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**

SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

Do not pay the price of the best and not obtain it

Roll Bars, Bed Plates, Barker Knives, Chipper Knives,
Rag Knives, Paper Trimming Knives, and Machine Knives
of every description used in paper mills.



Your purchase must be right and you must be pleased. Otherwise the transaction is not in our judgment a success. Let us have your inquiries.

R. J. DOWD KNIFE WORKS Beloit, Wis., U. S. A.

ROGERS WET MACHINE

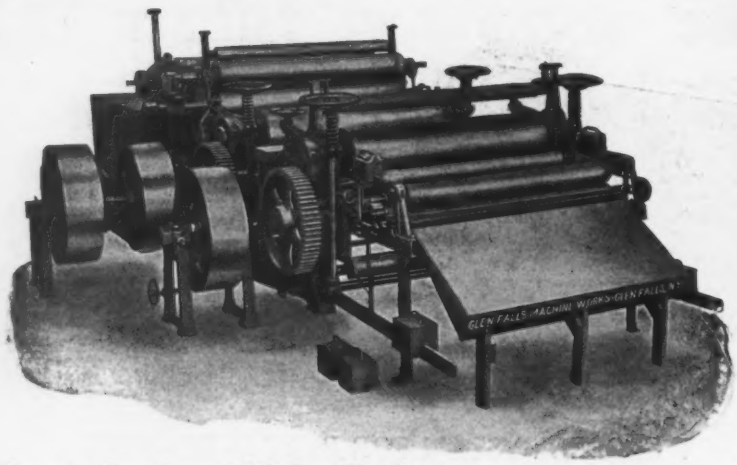


Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

TYPES—Single and Double Press 72" wide.

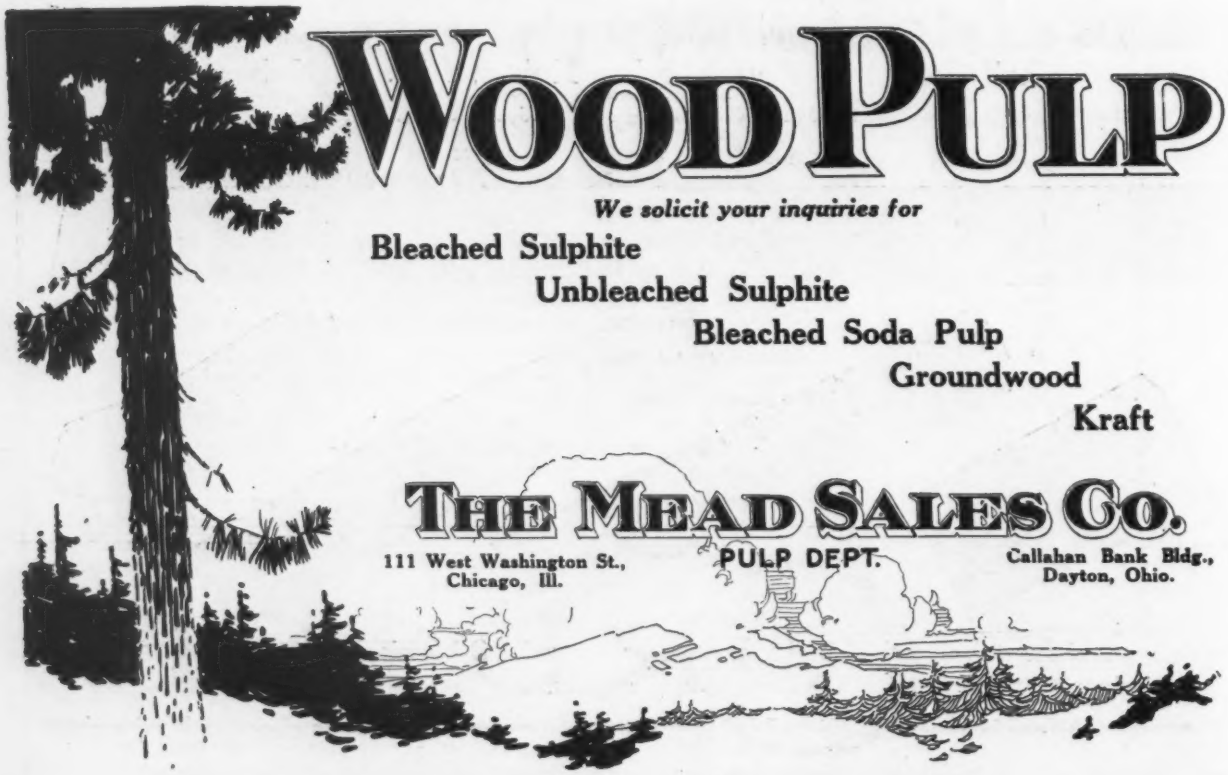
CAPACITY—either type 25-30 tons air dry stock per 24 hours.

SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the beater or for shipping. By this great capacity high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

WORKMANSHIP AND MATERIAL GUARANTEED

GLENS FALLS MACHINE WORKS Glens Falls, N. Y.

Try Our Split Cams for Your Flat Screens



WOOD PULP

We solicit your inquiries for

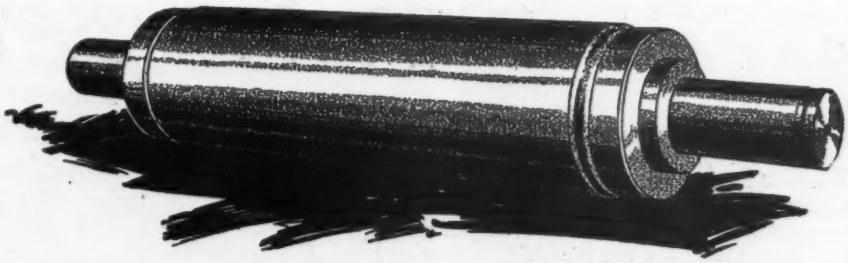
Bleached Sulphite
Unbleached Sulphite
Bleached Soda Pulp
Groundwood
Kraft

THE MEAD SALES CO.

111 West Washington St., Chicago, Ill.

PULP DEPT.

Callahan Bank Bldg., Dayton, Ohio.



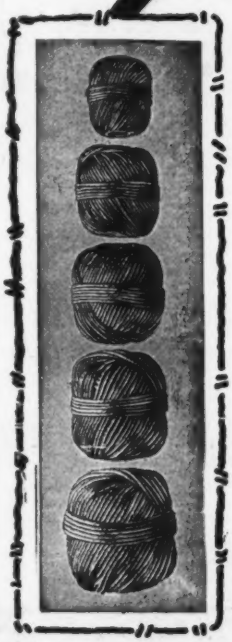
SUPER CALENDER ROLLS

The final touch is given your paper stock by the Calender Rolls. For half a century our rolls have been putting that finishing touch upon papers that have an acknowledged superiority.

THE APPLETON MACHINE COMPANY

APPLETON WISCONSIN

"AMERICAN"



PAPER MAKERS TWINE TUBE ROPE
WALL PAPER TWINE HAY ROPE
FINE AND COARSE POLISHED TWINES
"AMERICAN" BRAND MANILA ROPE
"AMERICAN" BRAND TRANSMISSION ROPE

The name "AMERICAN" as applied to cordage means "more value in every way." Send for copy of our General Catalogue, Prices and samples. Address Department M.

Largest Makers of Commercial Twines and Rope in the World

AMERICAN MANUFACTURING CO.
NOBLE AND WEST STREETS, BROOKLYN, NEW YORK CITY

CORDAGE

PHILADELPHIA PRICE INCREASES

(*Continued from page 20*)

just been added to the stock of the Wilcox, Walter, Furlong Paper Company, 231 Chestnut street. It formerly was stocked by the Paper House of Pennsylvania. The Wilcox, Walter, Furlong Company is also carrying Bantam Manifold.

The Morse Chain Company, owing to increasing business, has moved to larger and more desirable offices at 612 Franklin Trust Building, 18-22 South 15th street. J. A. Meaney, Philadelphia district manager, is in charge of the new office.

William B. Stinson, during the week, resigned his position in charge of the warehouse and traffic department of the D. L. Ward Company. He proposes to enter the real estate sales field.

A charter was granted during the week to A. W. Hutton Manufacturing Company, of this city, with a capital of $150,000, the object of which is paper box manufacturing. A. W. Hutton, who heads the incorporators, is widely known in the trade through long connection with the A. M. Collins Manufacturing Company.

Trade sympathy is being extended to William F. Killhour, treasurer of the Quaker City Paper Company, 6th and Commerce streets, who, on Wednesday, suffered the death of his octogenarian father, Martin Killhour, a retired farmer, who died at his home, 1648 Wakeling street, Frankford. Mr. and Mrs. Killhour were planning their sixtieth wedding anniversary, which shortly falls due. Two children, a son and a daughter, survive. Funeral services were held on Saturday afternoon from his late residence.

By the close of the week Wilder Brothers, 5th and Cherry streets, coarse paper and twine, with some fine papers also carried, hope to be in occupancy of the building which the firm recently purchased on 12th street, running from Brown to Olive street, where they will have three fronts. The firm will for the present occupy only the first floor and basement, but this will give it double the capacity of the old home. The Consumers' Paper Box Company is an occupant of an upper floor. In its new home the firm will add equipment for cutting and slitting paper and the production of specialties and also will increase its sales organization.

The municipal authorities propose, within the course of a year, to take possession for civic purposes of the land on which is now located the Universal Waste Products Company, with offices at 2546 Callowhill street, and the corporation, through Manager William G. Biles, is seeking a new home, preferably one with a river frontage, so as to permit tthe transportation of stock to the mills in Manayunk by water, and one having upwards of two acres of available space. The electrical baling equipment of the company has finally been perfected and is working at capacity. Most of the stock is sent to the Philadelphia Paper Manufacturing Company at Manayunk, which in the last few weeks has been using upwards of 400 tons of mixed and commons daily.

Reports reaching the city from Wilmington, Del., are that the paper manufacturing machinery departments of the Pusey & Jones Corporation there have orders enough to keep up capacity production for several months and that it is recalling to its service all the hands engaged there during the hectic war days.

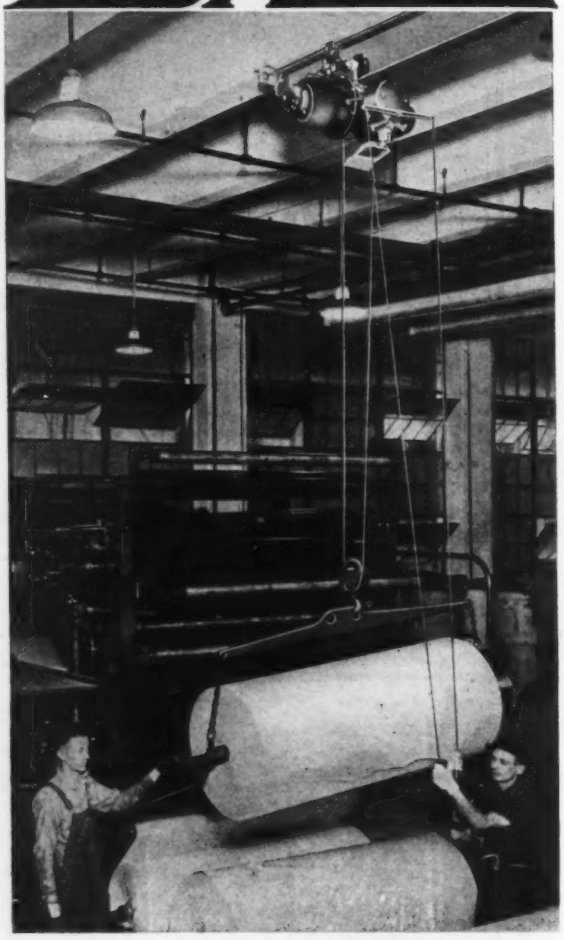
Handsome steel cabinets have been provided by A. Hartung & Co., 506, 512 Race street, for use in the distribution of its new line of cardboard samples, which will be ready for the trade in the Fall. All the grades, colors and weights of cardboard will be shown.

The Enterprise Paper Company, 3rd and Callowhill streets, has been appointed distributor for Philadelphia and vicinity for the O. W. D. Co., Tupper Lake, N. Y.

Irving N. Esleek Manufacutring Company, New York, pleased the Philadelphia distributors by a visit during the week.

John Infante, of Infante Brothers, paper stock packers, Water and Spruce streets, has returned to his duties after a seashore vacation, taken to recuperate from three successive operations undergone in a Philadelphia hospital.

THE SHEPARD ELECTRIC LIFT ABOUT



Low cost handling of paper in rolls

Handling and transfer can be made a very negligible production cost with a *LiftAbout.*

Paper in rolls and in cases, and pulp are handled with ease, speed and economy by this new ½ and 1 ton electric hoist.

It is produced on a quantity production basis and is surprisingly low in price. Many paper mills and warehouses are using them.

Tell us your requirements

SHEPARD ELECTRIC CRANE & HOIST CO.
378 Schuyler Ave., Montour Falls, N. Y.
Branches in Principal Cities
Member Electric Hoist Mfrs.' Assn. 2289-S

SHEPARD ELECTRIC CRANES & HOISTS

"Hello There, Mr. Jobber

I've been looking for you and the Lawrence line."

Your salesman always gets a welcome because the trade knows he has a quality proposition in

LAWRENCE GROCERS' BAGS

A high-grade, uniform line that pleases the grocer because it pleases his customers. Why not *concentrate* on this one good line and conserve valuable warehouse space? Write us!

James Lawrence, President

The Lawrence Bag Company

Miamisburg, Ohio

New York Trade Jottings

W. W. Cronkite, of the General Electric Company, Schenectady, N. Y., was among the New York trade visitors of the past week.

* * *

A. E. Cadman, of the Canadian Pulp and Paper Association, Drummond Building, Montreal, was among the New York trade visitors of the past week.

* * *

James McGee, salesman of George W. Miller & Co., 284 Lafayette street, New York, was elected to directorship in the company at a recent meeting of stockholders. George W. Hall, of the same company, was made secretary at the same meeting. Both men have an excellent record for service extending over a number of years.

* * *

The Domestic Mills Paper Company, of 96 Reade street, New York, was recently appointed exclusive distributor for both New York and New Jersey states, representing the Hoberg Paper and Fiber Company, Green Bay, Wis., in the sale of evergreen spruce folded utility towels and toilet tissue.

* * *

The C. J. Tagliabue Manufacturing Company, 18-88 Thirty-third street, Brooklyn, N. Y., will exhibit some of its representative products at the Chemical Exposition to be shortly held at the Grand Central Palace. The Tag Automatic temperature-humidity controller, as well as industrial and chemical thermometers and hydrometers will be on display.

* * *

The Universal Crepe and Tissue Mills, formerly located at 117 E. Eighteenth street, New York, have recently moved to Ballston Spa, N. Y. Their new quarters were at one time occupied by the Union Bag and Paper Corporation and are situated favorably with regard to raw materials. The executive and general sales offices of the Universal Mills will remain in New York.

* * *

W. G. MacNaughton, secretary of the Technical Association of the Pulp and Paper Industry, has returned from his visit to Springfield, Mass., where he conferred with George Williamson, president of the association. A safety code for paper and pulp mills to be prepared by the National Safety Council in conjunction with the American Engineering Standards Committee and the Technical Association, was among the matters discussed.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, 342 Madison avenue, New York, left the city the latter part of last week to attend a forestry meeting in New Hampshire. He will conclude a tour of eastern mills, including the Pjebscot Paper Company, with a few days' camping trip in the mountains and expects to return to New York about September 11. G. F. Ware, cost-accountant of the Bureau, is also on a two-weeks' vacation.

* * *

George D. Bearce, engineer of the News Print Service Bureau, is now in Wisconsin overseeing efficiency tests for various types of bark presses. The test on the Paulson Press is being made at the Niagara, Wis., mill of Kimberly-Clark, and the test on the American Bark Drum Press and the Nekoosa Press is being made at the Port Edwards mill of the Nekoosa-Edwards Paper Company. Besides Mr. Bearce and the company's engineers, the Forest Product Laboratory is co-operating in this work.

* * *

The Elsinore Paper Company, Inc., of 152 Wooster street, New York, filed petitions in bankruptcy during the past week, listing liabilities of $15,076 and assets of $8,620. The following are given as the principal creditors: Mason Perkins Paper Company, $4,838; Carthage Sulphite and Paper Company, $2,695; Unity Paper Mills, $1,531, and Poland Paper Company, $1,191. The main items of the company's assets are $4,500 in outstanding accounts, $3,000 in fixtures and stock on hand amounting to $1,000.

* * *

The Morse Chain Company, of Ithaca, N. Y., will hold its exhibit at the Eighth National Exposition of the Chemical Industry to be held in Grand Central Palace, New York, the week of September 11-16. Occupying Space 611, the company will exhibit, among other things, types of Morse Silent Chain Drives as used with paper mill beaters. A Baloptican, manufactured by Bausch & Lomb Optical Company, of Rochester, N. Y., will automatically and continuously show on a screen a series of views of Morse Chain Drives as used around the world in the chemical industries.

* * *

David L. Luke, president of the West Virginia Pulp and Paper Company, has been elected to the board of directors of The Bank of America, New York. Mr. Luke was a director of the Atlantic National Bank until it was recently consolidated with The Bank of America, merging two of the oldest banking institutions in New York and making The Bank of America's total resources over $125,000,000. Other former directors of the Atlantic National Bank who are now with Mr. Luke on The Bank of America directorate are Herman D. Kountze, ex-governor Phineas C. Lounsbury of Connecticut, Kimball C. Atwood, Gilbert H. Johnson and Edward K. Cherrill.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, August 28, 1922.—Business for the past week has held the same aspect as that of the past month, that is, demand in some lines is excellent, some considered fair and others rather quiet. The most quiet reports come from the bond paper manufacturers, demand being less active because most mills have withdrawn prices.

All paper men are looking with extreme conservatism on present buying prospects and lack to some extent speculative tendencies.

Bigger business is sure to come but present prices which have risen from 15 to 20 per cent will prevail for the next 90 days. General buying for the past week can be registered at more than normal; the fact that consumers need material is a definite fact. Tonnages on book papers have increased and orders for September in all book lines are larger than at any time during the past summer months.

J. Joyce, advertising manager of the Empire Paper Company, Chicago, is spending two weeks' vacation and will return about the first of September. The Empire Paper Company report business at normal and with the coming of the fall months look forward to increased sales.

W. N. Gillett, vice-president of the Chicago Paper Company, 801 South Wells street, left for Wellington, Mich., for a two weeks' stay.

Mr. Krause, salesman of the Chicago Paper Company, who was recently injured in an automobile accident, spent several hours visiting his old friends at the office. His injuries are healing rapidly and he will be back to work in about a week. The unfortunate accident in which one of Mr. Krause's friends was killed happened several weeks ago when a Deluxe cab ran over a forty foot embankment and turned turtle.

J. Powell, of the Allied Paper Company, Kalamazoo, transacted business in Chicago during the week starting August 21. Mr. Powell acknowledges that book paper sales have greatly increased.

C. W. Melke, salesmanager of the Paper Mills Company, 715 South Wells street, is spending his vacation at Bay View. Mr. Melke will return to the city early in September.

Paper Mills Company officials announce that business has rapidly taken a new aspect and their big business season will soon commence.

XUM

New York Office
280 Broadway

Chicago Office
1148 Otis Bldg.

Howard Bond

Howard Ledger

"The Paper of Many Uses"

Manufactured by

THE HOWARD PAPER COMPANY, Urbana, Ohio

West Virginia Pulp and Paper Company

Manufacturers of

Supercalendered and Machine

Finished Book and Lithographic Papers

Offset, Envelope and Music Paper, High Grade Coated Book and Label Papers

also

Bleached Spruce Sulphite and Soda Pulp

200 Fifth Avenue
New York

732 Sherman Street
Chicago

At Your Service!

Sulphite Bond, white and colors
Genuine Vegetable Parchment
White Waxed Papers
Household Specialties

AVP
PAPERS

GREASEPROOF PARCHMENT PAPERS

OF STANDARD QUALITY

Purity — Quality Plus

Ashmere — Equally Fine

Berkshire — Stands the Test

OUR PAPERS ARE EXCELLENT FOR MEAT MARKETS, GROCERS AND GENERAL PACKING HOUSE REQUIREMENTS

Mountain Mill Paper Co.

(Write for Samples and Quotations)
MILLS AND GENERAL OFFICES
125 Forest Street, Lee, Mass.

XUM

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, AUGUST 30, 1922.

When it was predicted in the late spring and early summer of the current year that September 1 would usher in an era of solid prosperity and good business for paper men, the possibility of two strikes, of as serious a nature as the coal and rail tieups have been, was not taken into consideration. It was argued that with the passing of the summer months—the "dry" season—stocks in the hands of consumers would have attained such low levels that a wholesale stocking up for the fall business would be inevitable.

Notwithstanding the fact that innumerable factors have conspired to thwart these predictions, and in spite of such elements as the uncertainty regarding the tariff, the shoe strike, the textile strike, the coal strike, the railroad strike, the threatened strike of news print workers earlier in the summer, etc.—in spite of all these things mills the country over are swinging into a lively gait, the volume of business is expanding day by day and the tone of the New York paper market is decidedly firm. This can only be accounted for by the fact that economic conditions in the country are returning to something resembling a pre-war normalcy. The pessimism of manufacturers whose production was either curtailed or shut off entirely by the coal strike has given way to optimism since last week's soft coal settlement. The whole industry has breathed a sigh of relief and braced its shoulder against the wheel, determined to make up for lost time.

From all appearances the second rise in news print prices which is to take effect on September 1 has had a correspondingly stiffening effect on nearly every other grade of paper. The increased cost of raw materials and production together with the industrial difficulties with which they have been confronted have given producers ample justification for jacking up the prices on all kinds of paper. Quotations have been so unsettled that book, fine, tissue, glassine and board manufacturers have all withdrawn quotations entirely and many are refusing orders at present price levels.

News print continues in practically unprecedented demand by publishers, and although mills have been coming pretty close to capacity throughout the summer and are still running full blast, the thirst of consumers for this commodity appears to be unquenchable. Issues of Metropolitan newspapers this summer have broken the records for a great many years preceding both for size and number of extra and special editions. Statistics show that the circulations of newspapers the country over are expanding phenomenally and on top of all, the strike situation has made publishers only too eager to assure themselves of a fall and winter supply.

Following on the heels of the predicted rise in prices in the book market comes the announcement from several leading manufacturers of book paper that all prices have been withdrawn. The excessive demand coupled with the high cost of raw materials and the coal scarcity are given as the reasons for this general withdrawal. For the past few weeks consumers have had difficulty in placing orders for book paper at the existing prices.

No break in the steady volume of business which has been accruing to fine paper dealers was apparent last week although, as in the book paper market, most producers have withdrawn all prices. The export demand for book, which has been on the rise for the last two or three weeks, following a slump of several months, reached its apex in the orders received this week. Latin-American business is said to be returning in goodly volume and if the present spurt continues the manufacturer's only problem will be to continue producing as fast as the commodity is consumed.

Tissue prices are still withdrawn, and the only obstacle in the way of a record period of production is the rail tieup. With their product sold up for two to three months in advance, manufacturers are now concerning themselves only with some feasible method of keeping up contract withdrawals. The soft coal settlement has lightened the tension in this market to a remarkable extent.

Kraft prices are steady to firm and although some dealers are reported to be turning down orders at present prices, a fair tonnage appears to be moving into consuming channels. Bogus mills, hard hit by the coal shortage, have in some cases refused to sell at all for prices as low as 2.50 cents a pound, so all quotations must be regarded as nominal.

Under cover of withdrawn quotations boxboard prices are ascending skyward—gradually, perhaps, but surely. The demand is almost as blood-thirsty as in the war-time period, but manufacturers are curbing over-zealous buyers by contracting only upon their ability to produce.

Mechanical Pulp

Ground wood prices are steady and there has been a regular amount of activity in the market during the past week. Between board manufacturers and news print plants the demand for mechanical pulp has been held considerably higher than the usual late summer demand. Due to the fact that there has hardly been any break in the grinding season, due to the excessive rains, ground wood producers are in good shape to take care of this unusual activity.

Chemical Pulp

Stiffening all the way along the line, the chemical pulp market is decidedly firm, the strong, regular demand from consuming channels giving the situation a healthy aspect. New York dealers report that the mills they represent are sold up for several months to come and importers state that the European primary markets are strengthening materially. No. 1 bleached sulphite is very firm and the domestic grade has no trouble in bringing around 4.25 cents a pound, mill.

Old Rope and Bagging

The rope market suffered a slight slump during the past week and prices on several grades registered declines. With the exception of roofing this condition also prevailed in the bagging market. Roofing mills continue to absorb large quantities of this commodity and at prices ranging upwards of 90 cents per 100 lbs. is in very good demand.

Waste Paper

Another one of the regular price advances struck the waste paper market last week and came as more or less of an echo to the loud and insistent demands of consumers rather than because the dealers felt that such an advance would be a nice thing to have. Paper stock of all grades has been enjoying a booming business. The low grades of waste paper have advanced in even more striking jumps than the better grades. It appears as though the comparative worth of soda pulp is no longer taken into consideration when price boosts are made, and it would be very hard to estimate just how high waste prices will go with the demand from board mills and others as strong as it is at present.

Rags

Dealers are having their difficulties in getting enough roofing rags to fill their orders and are using this as a price stimulant. Nearly all rags are firm in price and the tendency is to stiffen even above present levels. Roofing, for example, advanced during the past week and No. 1 white shirt cuttings are quoted upwards of 11.50 cents a pound. As a whole the market has a firm undertone and all indications point to a fall season of substantial business.

Twine

The twine market is reported to be firm, with orders coming in at a fair rate of speed considering the season of the year. Jute twine is in better demand than most of the other grades and mills are said to be running fairly close to capacity. The new jute prices are expected to be felt in this market as soon as fall business sets in and dealers in New York are eagerly awaiting this moment, some having refused to sell at prevailing prices.

XUM

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations August 29, 1922:

	BID.	ASKED.
American Writing Paper Company, pref.	31½	32
International Paper Company, com.	57¼	57⅜
International Paper Company, pref., stamped	74	75
Union Bag & Paper Corporation	70¼	71

Paper

F. o. b. Mill.

Ledgers, Bonds, Writings—Extra Superfine, Superfine, Tub Sized, Engine Sized	All quotations withdrawn
News—f. o. b. Mill—	
Rolls, contract	3.75 @ 4.00
Rolls, transit	4.00 @ —
Sheets	4.00 @ —
Side Runs	3.25 @ 3.50
Book, Cased—f. o. b. Mill	
S. & S. C., M. F., Coated and Enamel, Lithograph	All quotations withdrawn
Tissues—f. o. b. Mill	
White, No. 1, Colored, Anti-Tarnish, Silver Tissue, Manila	All quotations withdrawn
Kraft—f. o. b. Mill—	
No. 1 Domestic	7.00 @ 7.50
No. 2 Domestic	5.50 @ 6.25
Imported	6.00 @ 6.25
Screenings	2.75 @ 3.50
Manila—	
No. 1 Jute	8.50 @ 9.00
No. 2 Jute	7.75 @ 8.50
No. 1 Wood	4.50 @ 5.50
No. 2 Wood	4.00 @ 4.50
Butchers	4.25 @ 4.75
Fiber Papers—	
No. 1 Fiber	6.00 @ 6.25
No. 2 Fiber	5.00 @ 5.25
Common Bogus	2.50 @ —
Card Middies	4.00 @ 5.00
Boards—per ton—	
News, Straw, Chip, Binders' Board, Sgl. Mla. Ll.Chip, Wood Pulp, Container	All quotations withdrawn
Wax Paper—	
Self Sealing White 28 and 30 lb. basis	10.00 @ 11.00
Waxed Tissue	1.40 @ 1.60
Glassine—	
Bleached, basis 25 lbs., Bleached, basis 20 lbs.	All quotations withdrawn

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	32.00 @ 36.00
No. 1 Domestic	28.00 @ 32.00

(F. o. b. Pulp Mills.)

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—	
Bleached	4.30 @ 4.50
Easy Bleaching	2.85 @ 3.10
No. 1 strong unbleached	2.50 @ 2.75
No. 2 Strong unbleached	2.25 @ 2.50
No. 1 Kraft	2.70 @ 3.00
Sulphate—	
Bleached	3.90 @ 4.00
(F. o. b. Pulp Mill.)	
Sulphite (Domestic)—	
Bleached	4.00 @ 4.50
Strong unbl'chd.	2.60 @ 2.80
Easy Bleaching Sulphite	2.70 @ 3.10
News Sulphite	2.50 @ 2.80
Mitscherlich	2.75 @ 3.05
Kraft (Domestic)	2.50 @ 3.00
Soda Bleached	3.75 @ 4.00

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—	
New White, No. 1	11.25 @ 11.75
New White, No. 2	6.50 @ 7.00
Silesias, No. 1	6.25 @ 6.75
New Unbleached	9.00 @ 9.50
Washables	4.00 @ 4.25
Fancy	5.00 @ 5.50
Cotton—according to Grades—	
Blue Overall	6.00 @ 6.25
New Blue	4.75 @ 5.00
New Black Soft	5.50 @ 6.00
New Light Seconds	2.75 @ 3.00
O. D. Khaki Cuttings	3.75 @ 4.25
Men's Corduroy	2.75 @ 3.00
New Canvas	7.00 @ 7.25
New Black Mixed	2.50 @ 2.75
Old	
White, No. 1—	
Repacked	6.50 @ 6.75
Miscellaneous	5.50 @ 6.00
White, No. 2—	
Repacked	3.00 @ 3.25
Miscellaneous	2.75 @ 3.00
St. Soiled White	1.40 @ 1.50
Thirds and Blues—	
Repacked	1.75 @ 1.85
Miscellaneous	1.45 @ 1.55
Black stockings	2.90 @ 3.25
Rooting Rags—	
Cloth Strippings	1.25 @ 1.35
No. 1	1.25 @ 1.35
No. 2	1.20 @ 1.25
No. 3	.85 @ .95
No. 4	.85 @ .95
No. 5A	1.00 @ 1.10

Foreign Rags

New Light Silesias	6.00 nominal
Light Flannelettes	6.75 nominal
Unbl'chd Cottons	7.50 nominal
New White Cuttings	9.50 nominal
New Light Oxfords	6.00 nominal
New Light Prints	4.50 nominal
New Mixed Cuttings	2.00 @ 2.50
New Dark Cuttings	1.90 @ 2.10
No. 1 White Linens	9.00 @ 11.00
No. 2 White Linens	6.50 nominal
No. 3 White Linens	5.00 nominal
No. 4 White Linens	3.50 nominal
Old Extra Light Prints	2.00 nominal
Ord. Light Prints	1.75 nominal
Med. Light Prints	1.50 nominal
Dutch Blue Cottons	1.85 nominal
German Blue Cottons	1.50 nominal
Ger. Blue Linens	3.50 nominal
Checks and Blues	1.50 nominal
Dark Cottons	1.20 @ 1.30
Shoppery	1.00 @ 1.05
French Blues	2.00 nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—	
Foreign	1.00 @ 1.10
Domestic	1.00 @ 1.10
Wool, Tares, light	1.45 @ 1.55
Wool, Tares, heavy	1.50 @ 1.60
Bright Bagging	1.10 @ 1.25
No. 1 Scrap	1.00 @ 1.15
Sound Bagging	.85 @ .95
Manila Rope—	
Foreign	5.75 @ 6.25
Domestic	6.25 @ 6.50
New Bu. Cut	2.25 @ 2.45
Hessian Jute Threads—	
Foreign	2.25 @ 2.50
Domestic	2.20 @ 2.40
Mixed Strings	.90 @ 1.00

Twines

Cotton—(F. o. b. Mill)	
No. 1	.35 @ .37
No. 2	.31 @ .33
No. 3	.27 @ .29
India, No. 6 basis—	
Light	.20 @ .21
Dark	.19 @ .20
B. C., 18 Basis	.41 @ .42
A. B. Italian, 18 Basis	.51 @ .61
Finished Jute—	
Light, 18 basis	.26 @ .27
Dark, 18 basis	.29 @ .30
Jute Wrapping, 3-6 Ply—	
No. 1	.23 @ .24
No. 2	.21 @ .22
Tube Rope—	
4-ply and larger	.15 @ .17
Fine Tube Yarn—	
5-ply and larger	.19 @ .21
4-ply	.20 @ .22
3-ply	.20 @ .22
Unfinished India—	
Basis	.16 @ .17
Paper Makers Twine Balls	.13 @ .15
Box Twine, 2-3 ply	.18 @ .19
Jute Rope	.21 @ .24
Amer. Hemp, 6	.33 @ .35
Sisal Hay Rope—	
No. 1 Basis	.15 @ .17
No. 2 Basis	.13 @ .15
Sisal Lath Yarn—	
No. 1	.14 @ .15
No. 2	.11 @ .13
Manila Rope	.18 @ .19

Old Waste Papers

(F. o. b. New York)

Shavings—	
Hard, White, No. 1	3.90 @ 4.15
Hard, White, No. 2	3.50 @ 3.70
Soft, White, No. 1	3.50 @ 3.65
Flat Stock—	
Stitchless	2.00 @ 2.15
Over Issue Mag.	2.10 @ 2.20
Solid Flat Book	1.85 @ 2.00
Crumpled No. 1	1.45 @ 1.50
Solid Book Ledger	2.25 @ 2.50
Ledger Stock	1.90 @ 2.00
New B. B. Chips	.65 @ .70
Manilas—	
New Env. Cut	2.50 @ 2.75
New Cut No. 1	1.75 @ 2.00
Extra No. 1, Old	1.55 @ 1.65
Print	1.05 @ 1.15
Container Board	.90 @ 1.10
Bogus Wrapper	.80 @ .95
Old Kraft, machine compressed Bales	1.85 @ 1.95
News—	
No. 1 White News	1.80 @ 1.95
Strictly Overissue	.95 @ 1.00
Strictly Folded	.95 @ 1.05
No. 1 Mixed Paper	.70 @ .75
Common Paper	.55 @ .60

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35 @ 40
No. 1 Rag Bond	30 @ 35
No. 2 Rag Bond	18 @ 20
Water Marked Sulphite	10 @ 14
Sulphite Bond	9 @ 12
Sulphite Ledger	12 @ 13
Superfine Writing	18 @ 24
No. 1 Fine Writing	14 @ 22
No. 2 Fine Writing	12 @ 20
No. 3 Fine Writing	8 @ 12
No. 1 M. F. Book	6¼ @ 7
No. 1 S. & S. C. Book	6¾ @ 7½
Coated Book	8¾ @ 10¾
Coated Label	8½ @ 10½
News—Rolls, mill	3½ @ 4½
News—Sheets, mill	3¾ @ 4¾
No. 1 Manila	5½ @ 6
No. 1 Fiber	5 @ 5½
No. 2 Manila	4½ @ 5
Butchers' Manila	4 @ —
No. 1 Kraft	7 @ 7¼
No. 2 Kraft	6 @ 6½
Wood Tag Boards	4 @ —
Screenings	2½ @ —
Boards, per ton—Plain Chip, Solid News, Manila Lined Chip, Container Line—85 Test, 100 Test	All quotations withdrawn
Binders' Board, Solid Wood Pulp, Straw Board, Filled Pulp Board	All quotations withdrawn

Old Papers

Shavings—	
No. 1 Hard White	4.25 @ 4.50
No. 1 Soft Shav.	3.50 @ 3.75
No. 1 Mixed	1.75 @ 2.00
No. 2 Mixed	1.50 @ 1.75
White Envel. Cuttings	4.25 @ 4.50
Ledgers and Writings	2.40 @ 2.50
Solid Books	2.25 @ 2.50
No. 1 Books, light	2.10 @ 2.25
Blanks	2.00 @ 2.25
Ex. No. 1 Manila	2.10 @ 2.25
Manila Envelope Cuttings	2.10 @ 2.25
No. 1 Manilas	1.50 @ 1.65
Folders News (over issue)	1.25 @ 1.35
Old Newspaper	1.15 @ 1.25
Mixed Papers	1.10 @ 1.25
Straw Clippings	1.10 @ 1.25
Binders Clippings	1.10 @ 1.25
Kraft	2.10 @ 2.25
New Kraft Cuts	2.20 @ 2.35
Roofing Stock, f.o.b. Chicago, Net Cash—	
No. 1	35.00 @
No. 2	33.00 @
No. 3	31.00 @
No. 4	31.00 @

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10 @ .60
Ledgers	.15 @ .40
Writings—	
Superfine	.15 @ .20
Extra fine	.12 @ .22
Fine	.20 @ .30
Fine, No. 2	.20 @ .25
Fine, No. 3	.15 @ .20
Book, M. F.	.06 @ .09
Book, S. S. & C.	.08 @ .15
Book, Coated	.08 @ .15
Coated Lithograph	.10 @ .15
Label	.08 @ .15
News	.05 @ .07
No. 1 Jute Manila	.12 @ .13
Manila Sul., No. 1	.08 @ .08½
Manila No. 2	.07½ @ .08
No. 2 Kraft	— @ .08½
No. 1 Kraft	— @ .09½
Common Bogus	.02½ @ .03
Straw Board, News Board, Chip Board, Wood Pulp Board (Carload lots), Binder Boards—Per ton, Carload lots	All quotations withdrawn
Tarred Felts—Regular	48.00 @ 50.00
Slaters	54.00 @ 56.00
Best Tarred, 1-ply (per roll)	1.35 @ 1.50
Best Tarred, 2-ply (per roll)	1.00 @ 1.15
Best Tarred, 3-ply	1.50 @ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—	
Foreign	.75 @ —
Domestic	.70 @ —
Manila Rope	4.00 @ 4.50
Sisal Rope	.75 @ .80
Mixed Rope	.75 @ .80
Scrap Burlaps	1.00 @ 1.25
Wool Tares, heavy	2.50 @ 2.75
Mixed Strings	.75 @ .80
No. 1, New Lt. Burlap	.75 @ .80
New Burlap Cuttings	1.75 @ 2.10

Old Papers

F. o. b. Phila.

Shavings—	
No. 1, Hard White	4.00 @ 4.25
No. 2, Hard White	3.50 @ 3.75
No. 1 Soft White	3.60 @ 3.75
No. 2 Soft White	2.00 @ 2.25
No. 1 Mixed	1.50 @ 1.75
No. 2 Mixed	1.00 @ 1.25

(Continued on page 66)

XUM

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 26, 1922

SUMMARY

News print.....754 rolls
Printing paper.....48 cs., 62 bls.
Wrapping paper.....3,525 rolls, 344 bls.
Packing paper.....94 bls.
Writing paper.....12 cs.
Surface coated paper.....91 cs.
Wall paper.....1,303 bls.
Filter paper.....20 bls.
Metal paper.....11 cs.
Blue print paper.....84 rolls, 8 cs.
Tracing paper.....3 cs.
Drawing paper.....29 cs.
Miscellaneous paper.....60 rolls, 523 bls., 30 cs.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., Bergensfjord, Kristiania, 3,525 rolls.
Wilkinson Bros. & Co., Inc., Bergensfjord, Kristiania, 199 bls.
Wilkinson Bros. & Co., Inc., Independence Hall, Rotterdam, 145 bls.

PACKING PAPER

Birn & Wachenheim, Ryndam, Rotterdam, 94 bls.

WRITING PAPER

Black, Starr & Frost, France, Havre, 7 cs.
Coenca, Morrison & Co., France, Havre, 5 cs.

SURFACE COATED PAPER

M. G. Lange, Hanover, Bremen, 91 cs.

WALL PAPER

A. Murphy & Co., Mt. Carroll, Hamburg, 22 bls.
J. W. Hampton, Jr., & Co., Mongolia, Hamburg, 1,281 bls.

NEWS PRINT

Chase National Bank, Bergensfjord, Kristiania, 754 rolls.

FILTER PAPER

A. Gilse & Son, Mt. Carroll, Hamburg, 20 bls.

METAL PAPER

Irving National Bank, Mt. Carroll, Hamburg, 11 cs.

PRINTING PAPER

Steiner Paper Co., Mt. Carroll, Hamburg, 48 cs.
Equitable Trust Co., Oropesa, Hamburg, 62 bls.

BLUE PRINT PAPER

Keuffel & Esser, Mt. Carroll, Hamburg, 84 rolls.
Keuffel & Esser, Mt. Carroll, Hamburg, 8 cs.

TRACING PAPER

Keuffel & Esser, Mt. Carroll, Hamburg, 3 cs.

DRAWING PAPER

Keuffel & Esser, Mt. Carroll, Hamburg, 29 cs.

PAPER

Fernstrom Paper Co., Inc., Bergensfjord, Kristiania, 60 rolls.
Fernstrom Paper Co., Inc., Bergensfjord, Kristiania, 7 bls.
J. P. Heffernan Paper Co., Bergensfjord, Kristiania, 496 bls.
E. Dietzgen & Co., Oropesa, Hamburg, 12 cs.
Wilkinson Bros. & Co., Inc., Oropesa, Hamburg, 15 bls.
H. D. Cutty Co., Mongolia, Hamburg, 8 cs.
Windowphanie Co., Chicago, Havre, 5 bls.
R. F. Downing & Co., France, Havre, 10 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., Hannover, Hamburg, 673 bls. rags.
E. J. Keller Co., Inc., Hannover, Bremen, 456 bls. rags.
Equitable Trust Co., Hannover, Bremen, 166 bls. rags.
F. P. Gaskell, Hannover, Bremen, 239 bls. rags.
E. J. Keller Co., Inc., Susquehanna, Bremen, 74 bls. rags.
N. S. Lines, Susquehanna, Bremen, 434 bls. rags.
International Purchasing Co., Chicago, Havre, 71 bls. rags.
D. M. Hicks, Inc., Chicago, Havre, 410 bls. rags.
M. O'Meara Co., Argus, Antwerp, 30 bls. rags.
M. O'Meara Co., Argus, Antwerp, 271 bls. flax waste.
Northern Metals Selling Co., Argus, Antwerp, 115 bls. rags.
American Wood Pulp Corp., Argus, Antwerp, 960 bls. rags.
Waste Material Trading Co., Argus, Antwerp, 190 bls. rags.
E. J. Keller Co., Inc., Argus, Antwerp, 571 bls. bagging.
E. J. Keller Co., Inc., Ryndam, Rotterdam, 25 bls. paper stock.
I. M. Jaffe, Ryndam, Rotterdam, 39 bls. rags.
E. J. Keller Co., Inc., Prince Fillmore, Bremen, 47 bls. rags.
E. J. Keller Co., Inc., Hansa, Hamburg, 29 bls. rags.
Katzenstein & Keene, Inc., Archimedes, Liverpool, 125 bls. new cuttings.
Katzenstein & Keene, Verbania, London, 157 bls. bagging.
Katzenstein & Keene, Inc., Verentia, London, 121 bls. rags.
Katzenstein & Keene, Inc., Vechtdyk, Rotterdam, 68 bls. rags.
G. W. Millar & Co., Inc., Lepanto, Newcastle, 276 bls. rags.
D. M. Hicks, Inc., Lepanto, Newcastle, 47 bls. waste paper.
E. J. Keller Co., Inc., Lepanto, Newcastle, 1 bl. waste paper.
Equitable Trust Co., Boston City, Bristol, 229 bls. waste paper.
Guaranty Trust Co., Boston City, Bristol, 179 bls. rags.

OLD ROPE

W. Schall & Co., Lepanto, Newcastle, 144 coils.
Katzenstein & Keene, Inc., Karlsnik, Genoa, 214 bls.
Brown Bros. & Co., Boston City, Bristol, 210 coils.
Brown Bros. & Co., Ville du Havre, Oran, 77 coils.
R. F. Downing & Co., Bankdale, Barcelona, 181 coils.

WOOD PULP

Bulkley, Dunton & Co., Marshall Foch, Liverpool, N. S., 6,260 bls.
E. M. Sergeant, Bergensfjord, Kristiania, 750 bls., 152 tons.
J. Andersen & Co., Bergensfjord, Kristiania, 1,350 bls.

WOOD FLOUR

B. L. Soberski, Bergensfjord, Kristiania, 2,391 bags, 162,588 ks.
The Hansa Co., Oropesa, Hamburg, 556 bags.
A. Kramer & Co., Oropesa, Hamburg, 556 bags.
A. Kramer & Co., Oropesa, Hamburg, 736 bags.
A. Kramer & Co., Caronia, Hamburg, 312 bags.

CASEIN

A. Klipstein & Co., Hannover, Bremen, 423 bags.

CHINA CLAY

C. B. Richard & Co., Boston City, Bristol, 150 bags.

BALTIMORE IMPORTS

WEEK ENDING AUGUST 26, 1922

Wood Pulp Trading Co., Iggesund, Carlsholm, 6,000 bls. wood pulp.
The Borregaard Co., Inc., Tasmanic, Gothenburg, 1,000 bls. wood pulp.
Guaranty Trust Co., Tasmanic, Gothenburg, 3,000 bls. wood pulp.
Katzenstein & Keene, Inc., West Zeda, London, 80 bls. rags, 63 bls. bagging.
Katzenstein & Keene, Inc., Manchester Mariner, Liverpool, 61 bls. new cuttings.
E. J. Keller Co., Inc., Hudson, Havre, 210 bls. rags.
E. J. Keller Co., Inc., Hudson, Havre, 104 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING AUGUST 26, 1922

E. J. Keller Co., Inc., West Kasson, Antwerp, 422 bls. rags.
E. J. Keller Co., Inc., West Segoon, Manchester, 241 bls. bagging.

BOSTON IMPORTS

WEEK ENDING AUGUST 26, 1922

Katzenstein & Keene, Inc., Caledonian, Liverpool, 288 bls. new cuttings.
Katzenstein & Keene, Inc., Caledonian, Liverpool, 42 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 29, 1922

Guaranty Trust Co., Boston City, Bristol, 896 bls. paper stock.
Castle, Gottteil & Overton, Verentia, London, 80 bls. waste paper.
Castle, Gottheil & Overton, Southwestern Miller, London, 228 bls. rags.
Castle, Gottheil & Overton, Eastern Dawn, Rotterdam, 1,974 bls. rags.
Castle, Gottheil & Overton, Argus, Antwerp, 246 bls. rags.
E. J. Keller Co., Inc., Argus, Antwerp, 351 bls. rags.
E. J. Keller Co., Inc., Breedyk, Rotterdam, 375 bls. rags.
E. J. Keller Co., Inc., Western Scout, Hamburg, 536 bls. rags.
E. J. Keller Co., Inc., Phoebus, Marseilles, 896 bls. rags.
Katzenstein & Keene, Inc., Manchester Mariner, Liverpool, 79 bls. new cuttings.
Katzenstein & Keene, Inc., Blydendyk, Rotterdam, 361 bls. rags.
Katzenstein & Keene, Inc., Hudson, Bordeaux, 197 bls. rags.
Katzenstein & Keene, Inc., Southwestern Miller, London, 139 bls. rags.
Katzenstein & Keene, Inc., Argus, Antwerp, 521 bls. rags.
Equitable Trust Co., Argus, Antwerp, 290 bls. rags.
American Exchange National Bank, Argus, Antwerp, 473 bls. rags.
Congoleum Co., Argus, Antwerp, 461 bls. rags.
M. O'Meara Co., Argus, Antwerp, 171 bls. rags.
Wood Pulp Trading Co., Carlsholm, Hermosand, 900 bls. wood pulp.

Knowlton Bros. Mill Has Bowling Dinner

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., August 28, 1922.—The bowling dinner which was the grand prize at stake in the tournament of ten pins rolled by teams at Knowlton Brothers' mill a year ago last winter will be held September 10 at the Ontario Bay House at Sandy Point. During the depression in business which resulted in throwing many of the employees out of work the winners declined to permit the losers to stage the dinner. That caused the delay, but just now conditions are again normal and the dinner is scheduled.

J. J. Mackey headed the three teams on the east side of Mill street and W. H. Schell did the directing of strategy for the westsiders. The exciting climax of the schedule is still fresh in the minds of the officers and employees of the Kamargo mills, as they recall how "General" Mackey's forces were turned back in the last encounter.

The bowlers and their wives and sweethearts on the winning teams are guests of the losers, but all employees are invited. Besides the dinner there will be enjoyed a baseball game, fishing, bathing and such other sports as will properly come before the meeting.

XUM

The B Co INC

Quality: *It means more than price*

PULPS

"Hafslund Bear" "Forshaga"

BLEACHED SULPHITE

"Klarafors"

EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" "Bamble"

EXTRA STRONG KRAFT; BLEACHED AND BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST "Dejefors" DRY

WHITE SPRUCE—GROUND WOOD

Tonnage available on dock for prompt shipment

THE BORREGAARD CO., INC.
200 FIFTH AVENUE NEW YORK CITY

Clay

300 Tons daily

Some portion of our clay production is ***pulverized.*** That part of it which is ***pulverized*** is, as far as we know, the only ***pulverized clay*** which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices on M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit samples and quote you

AMERICAN MADE FOR AMERICAN TRADE

THE MINER EDGAR CO

110 William Street New York

TAYLOR, BATES & CO.

Members New York Stock Exchange
Members New York Cotton Exchange

100 Broadway, New York

Tel. Rector 1140

BONDS STOCKS COTTON	Bought and Sold on Commission

BRANCH OFFICE

41 EAST 42nd STREET

Tel. Murray Hill 5631

1864 1922

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt probems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY

BULKLEY, DUNTON & COMPANY

75-77 Duane St., N. Y., and direct

XUM

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, AUGUST 29, 1922.

BLEACHING POWDER.—Bleach prices are headed skyward due to the fact that manufacturers' reserves are practically diminished and they are sold straight through to January, 1923. All price quotations may be regarded as nominal due to the unsettled fuel and rail conditions.

BLANC FIXE.—The tone of this market has been developing steadily in recent weeks, the past week representing the peak of the demand from consuming quarters. Dealers are optimistic regarding prospects for this fall's business and believe that the present prices of $40 to $50 for blanc fixe pulp and $75 to $85 for the dry will undergo some stiffening in the near future.

CASEIN.—There has been practically no change in the abnormal condition prevailing in the casein market. Spot casein is almost an unknown quantity and the small lots which are turned over bring in the neighborhood of 20 cents a pound.

CAUSTIC SODA.—Regular quantities of caustic continue to be absorbed by consumers and the quoted prices have remained fairly steady, remaining in the neighborhood of 3.10 to 3.25 cents a pound, contract, basis 60 per cent. Spot caustic, f. o. b. works, averages 2.50 cents a pound.

CHINA CLAY.—Leading dealers in this commodity report that some of the largest shipments on record have recently been made to various ports of the United States. Despite the fact that both English and American bottoms have been devoted to the transport of coal during the emergency in this country, considerable quantities of clay have been imported to meet the enormous demand. Quoted prices are: Domestic washed, $7 to $10; domestic unwashed, $5.50 to $8; imported, $14 to $22 per ton.

LIQUID CHLORINE.—Chlorine prices evince a slight steadying tendency with fall business practically at hand. Quotations still vary, however, from 4.00 cents per pound in carload lots to 7.00 cents in the 100-lb. cylinders.

ROSIN.—Although prices are quite firm at the slightly higher price of $6.25 per barrel of 280 pounds, grades E, F and G, ex dock New York, rosin is reported to have sagged off a trifle during the past week in demand.

SALTCAKE.—Chrome cake is now getting $23 per ton and better and with acid cake upwards of $26, the market appears to be stiffening day by day. Demand is very strong and supplies are on the ragged edge of depletion.

SATIN WHITE.—The market for this commodity is strengthening to a noticeable extent and the quoted prices of 1.50 to 2.00 cents a pound are generally regarded as steady to firm.

SODA ASH.—Producers of soda ash are reported to be experiencing considerable difficulties in securing enough coal to keep anywhere near their normal output and take care of regular contract withdrawals. Lack of transportation facilities is also hindering soda ash traffic appreciably. The contract price of 1.51 cents a pound, established in the 1922 price schedule, still holds.

SULPHUR.—In anticipation of the increased paper production to take care of the heavy fall demand, sulphur companies have been enjoying a goodly volume of business during the past week. Although both fuel and transportation problems enter into this market, these difficulties have not yet been reflected in the price of brimstone, which, as with soda ash, is sold on an annual price schedule basis. The New York price on sulphur is still $18 to $20 per ton.

SULPHATE OF ALUMINA.—Western sulphate manufacturers have been shut out of the market for the past three weeks, their plants, in many cases, being closed down entirely until fuel conditions become more tolerable. Iron free sulphate is quoted at $2.25 and upwards per 100 pounds while the commercial grade is still in the neighborhood of $1.40, works, in bag quantities.

Market Quotations

(*Continued from page 63*).

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	.02	@	2.25
No. 1 Books, heavy.	1.80	@	1.90
No. 2 Books, light.	1.40	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila..	1.50	@	1.75
Container Manila...	1.20	@	1.25
Old Kraft.....	2.25	@	2.50
Overissue News....	1.25	@	1.30
Old Newspaper....	1.15	@	1.20
No. 1 Mixed Paper.	.01	@	1.10
Common Paper....	.75	@	.80
Straw Board, Chip.	.75	@	.80
Binders' Bd. Chip..	.75	@	.80
Domestic Rags—New. Price to Mill, f. o. b. Phila.			
Shirt Cuttings—			
New White, No. 1	.10	@	.10¼
New White, No. 2	.05½	@	.06½
Silesias, No. 1...	.05½	@	.06
New unbleached..	.09	@	.09½
Washables	.03½	@	.03¾
Fancy	.04½	@	.04¾
Cottons—according to grades—			
Blue Overall.....	.04½	@	.05¼
New Blue.....	.02	@	.02¼
New Black Soft.	.03	@	.03¼
New Light Sec-			
ds.	.02	@	.02¼
Khaki Cuttings...	.02¼	@	.03¼
Corduroy	.02	@	.02½
New Canvas.....	.07	@	.07½
New Black Mixed	2.75	@	3.00
Old			
White, No. 1—			
Repacked	.06	@	.06¼
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03¼
Miscellaneous ...	.02¾	@	.02¾
Thirds and Blues—			
Repacked	1.65	@	1.80
Miscellaneous ...	1.40	@	1.55
Black Stockings....	1.75	@	2.25
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.90	@	1.00
No. 3.....	.80	@	.90
No. 4.....	.80	@	.90
No. 5A.....		nominal	
B.....		nominal	
C.....		nominal	

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.06¾	@	.65
Ledgers	.07½	@	.55
Writings	.07½	@	.22½
Superfine	.15	@	.22½
Fine	.15	@	.18
Books, S. & S. C....	.07	@	.12
Books, M. F	.05¾	@	.10
Books, coated	.08	@	.10
Label	.08½	@	.09½
News, sheets	4.00	@	4.25
News rolls.....	4.00	@	4.25
Manilas—			
No. 1 Manila...	$5.50	@	7.00
No. 1 Fibre	.07½	@	—
No. 1 Jute.....	10.50	@	12.00
Kraft Wrapping ...	.06¾	@	.07
Common Bogus ...	3.00	@	

Boards

(Per Ton Destination)

Chip	$50.00	@	55.00
News, Vat Lined..	51.50	@	55.00
Wood, Vat Lined..	60.00	@	65.00
Filled News Board.	45.00	@	
Solid News Board..	42.00	@	45.00
S. Manila Chip....	52.50	@	
Pat. Coated.....	70.00	@	85.00

Old Papers

Shavings—			
No. 1 Hard White	3.70	@	3.90
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed....	1.50	@	1.75
Ledgers & Writings	1.70	@	1.80
Solid Books	1.35	@	1.80
Blanks	1.70	@	1.80
No. 2 Books Light.	.70	@	.75
Folded News, over-			
issues	19.00	@	20.00
Gunny Bagging ...	.85	@	.90
Manila Rope.....	5.75	@	6.00
Common Paper....	.62½	@	.67
Old News.....	.80	@	.90
Old Kraft.....	1.75	@	1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.9½	@	.12
News, f. o. b. Mills—			
Rolls (carloads).	3.50	@	
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.50
Book—			
No. 1 M. F. (carloads)	8.50	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	9.00	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 1 Coated and litho.	14.00	@	—
No. 2 Coated and litho.	13.00	@	—
No. 3 Coated and litho.	12.25	@	—
Coated and litho., colored	14.25	@	—
Wrapping—			
Grey	4.50	@	—
White Wrap	5.00	@	—
"B" Manila	5.50	@	—
No. 1 Manila ..	6.75	@	—
Fibre	6.75	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....$	25.00	@	37.50
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade.	45.00	@	55.00
Sulphite, bleached..	80.00	@	90.00
Sulphate	70.00	@	

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book Shavings	3.40	@	3.40
White Blk News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.70	@	—
Light and Crumpled Book Stock	1.55	@	—
Ledgers and Writings	1.95	@	—
Solid Ledgers....	1.95	@	—
Manilas—			
New Manila Cut.	1.70	@	1.80
Printed Manilas..	.90	@	1.00
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.		Per lb.	
No. 1 White shirt cuttings	.11	@	.11¼
No. 2 White shirt cuttings	.06½	@	—
Fancy shirt cuttings	.05	@	.05½
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02½
		Per cwt.	
Black stockings..	2.00	@	2.25
Roofing stock:			
No. 1.....	1.35	@	—
No. 2.....	1.20	@	—
Roofing stock:			
Manila rope.....	.06	@	.06¼
No. 2.....	.01½	@	—
Gunny bagging....	1.00	@	1.25

XUM

The Home of Quality

FACTORY
132ND TO 133RD ST. & BROOK AVE

PAPER BAGS

Sacks and Specialties

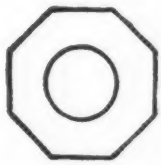
ESTABLISHED 1901

SCHORSCH & CO.

Manufacturers

500 East 133d Street : New York

This Registered Trade Mark Octagon



on a Paper Bag Vouches for Its Good Quality

Buchanan & Bolt Wire Company

ESTABLISHED 1878 AT HOLYOKE, MASS.

Makers of Highest Grade Fourdrinier Wires, Dandy Rolls, Cylinder Covers, Brass Wire Cloth of all Meshes for Paper, Pulp and Coating Mills—Quality Guaranteed

We make a Specialty of Fine Wires for Magazine and Book Papers

Felt Test—Lowest Cost per Ton

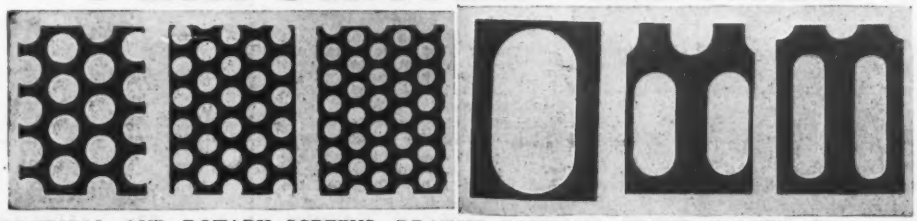
If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

PERFORATED METALS

All sizes and shapes of Holes



All kinds and thicknesses of Metal

FOR CENTRIFUGAL AND ROTARY SCREENS, DRAINER BOTTOMS, FILTER PLATES, PULP WASHERS, ETC.

The Harrington & King Perforating Company

618 No. Union Ave., Chicago, Ill., U. S. A. New York Office, 114 Liberty St.

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, $1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small **For Sale Ads,** 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—An experienced beaterman on Book Paper. A man good on color. Two tour mill. Address, Box 5362, care Paper Trade Journal. A-31

SALESMAN WANTED for Coating Mill situated in the East. Must be high class man and have considerable experience in selling high class coated papers. Good position for the right man. Address, Box 5364, care Paper Trade Journal. S-14

WANTED—First class machine tender on two-cylinder tissue and specialty machine. Address, Box 5365, care Paper Trade Journal. S-14

WANTED—Practical man as assistant superintendent for container board mill. Address, Box 5366, care Paper Trade Journal. S-7

WANTED—A good detail draftsman who has had experience in and around paper mills. The Shartle Brothers Machine Company, Middletown, Ohio. A-31

WANTED—Young man as operator on Potdevin bag machines. It is necessary that he be experienced. Address, Waterproof Paper Products, Inc., Herkimer, N. Y. A-31

WANTED—Back tender for Dry and Water Finish Paper. Hartje Paper Mfg. Company. A-31

MILLWRIGHT—Competent and experienced fifty ton board mill in first class shape. Best of living conditions within short distance of plant. State experience and salary desired. Address, Box 5379, care Paper Trade Journal. A-31

WANTED—Backtenders for a sixty-inch board machine. Two tours. City job. Address, Box 5380, care Paper Trade Journal. S-7

PURCHASING AGENT

Energetic and up-to-date, immediately, for modern waxed paper plant in Middle West. Must be experienced paper man and fully conversant with all converting processes. One with mechanical and engineering knowledge preferred. Well paying, permanent position with future. Answer with full details of references and experience. Address, Box 5378, care Paper Trade Journal. S-14.

HELP WANTED

WANTED—Asbestos machine tender, beater engineer and back tender. Mill located in New Jersey. Address, Box 5781, care Paper Trade Journal. A-31

WANTED—Wood room foreman, must be good mechanic and understand how to prepare uniform clean chips. Give references, experience, wages expected. Address, Box 5386, care Paper Trade Journal. S-7

EXECUTIVE WANTED as General Manager for a two machine mill making book and bond paper. Must be a practical paper maker and must have had successful experience in a similar position. This is a good, permanent position for a high grade man. Address, reply to Box 5350, care Paper Trade Journal. A-31

WANTED—Envelope adjuster who is competent in taking full charge of one Rotary and six Plunger Type Machines. Plant located on Pacific Coast. Good opportunity. Steady position. In application, give experience, age and salary expected. Address, Box 5347, care Paper Trade Journal. S-6

WANTED—Machine Tender on slow running fourdrinier machine making specialties. Two tour run. Give age, references, etc. Address, Box 5351, care Paper Trade Journal. A-31

WANTED—Machine Tender on Straw Corrugating, eight hour shifts. Address. The Thompson & Norris Co., Brookville, Indiana. A-31

PAPER SALESMAN

Energetic, ambitious young salesman having good knowledge of wrapping papers wanted by large established New York Firm. Selling experience to jobbers and large converters preferred. Remuneration dependent upon results. State age, experience, references, remuneration expected. Confidential. Address, Box 5363, care Paper Trade Journal. A-31

SITUATIONS WANTED

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5367, care Paper Trade Journal. tf

WANTED—Position as superintendent of Greaseproof and Glassine mill. Have had fifteen years' experience in the manufacturing of these papers. Am thoroughly competent and reliable man. Will give full particulars upon request. Address, Box 5368, care Paper Trade Journal. S-7

SUPERINTENDENT open for position. Up-to-date on colored specialties, Grease proof, Glassine, Rope, Jute and all grades of wrapping, also book and bond papers. Am a good mechanic and can handle help. Address, Box 5369, care Paper Trade Journal. S-7

FOURDRINIER MACHINE TENDER, 20 years experience, kraft, manillas or book. Would like to make a change. Address, Box 5371, care Paper Trade Journal. A-31

SITUATIONS WANTED

OFFICE MANAGER, experienced in accounting, costs and all office routine, seeks responsible position. Best of references. Salary $3,600. Address, Box 5372, care Paper Trade Journal. A-31

SITUATION WANTED as assistant in technical paper or board mill. Three years' experience and first class references. Address, Box 5373, care Paper Trade Journal. A-31

BOSS FINISHER whom previous managers and superintendents have stated "was the best finishing foreman ever employed by them." Experienced on cutters, calendars and shipping. Best references. Address, Box 5374, care Paper Trade Journal. S-14

SUPERINTENDENT open for engagement, October first. Eighteen years handling mills successfully. Five years with present company. Will consider any proposition regardless of conditions. Address, Box 5375, care Paper Trade Journal. A-31

SALESMAN well acquainted in the Chicago Territory on Corrugated, Solid Fibre and Folding Boxes would like to connect with manufacturer of one or all of the above lines. Over 20 years experience both inside and out. Have excellent acquaintance with the wholesale paper trade and would consider direct mill proposition for this territory. Can furnish high class references. Address, Box 5376, care Paper Trade Journal. S-7

MECHANICAL ENGINEER with 10 years' experience designing Paper Mill machinery. Up-to-the-minute with latest developments in News, Kraft, Book and Board Machines. With present employer 5 years as assistant chief engineer. Age 32 years. Position preferred as Resident engineer or master mechanic with paper mill. Address, Box 5382, care Paper Trade Journal. A-31

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. tf

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

SALESMANAGER AND BUSINESS EXECUTIVE: 15 years' experience in practically all lines of paper, particularly specialties, 12 years with one concern. Experience in administration, buying, selling, advertising and general management. Christian, 33 years old. Open for a permanent connection where there is a future for the right man. Address, Box 5385, care Paper Trade Journal. A-31

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. A-31

A MILL AGENT

now visiting every paper jobber east of Ohio, south of Maine and north of Jacksonville, Fla., and selling most of them, wants to take on a few additional lines on a commission basis. What have you to offer? Address, Box 5370, care Paper Trade Journal. A-31

XUM

SITUATIONS WANTED

POSITION WANTED—Sulphite Superintendent who is technical, practical and experienced producer of high grade bleached and unbleached pulps, using both quick and slow cook methods, desires position. Present employer must be given 30 days' notice. Address, Box 5337, care Paper Trade Journal. A-31

SUPERINTENDENT—Twenty-five years' experience. Open for employment. Up-to-date all grades boards and cylinder papers. Good executive. Address, Box 5340, care Paper Trade Journal. A-31

SUPERINTENDENT open for position. Eighteen years' experience on bonds, ledgers and high grade papeterie. Good man on colors and can get results. Good references. Address, Box 5336, care Paper Trade Journal. A-31

WANTED POSITION as Night Superintendent or Tour Boss, will accept Machine tender, married, steady, experienced on Test, Box Board, Specialties, Roofing and Straw. Best references. Address, Box 5342, care Paper Trade Journal. A-31

POSITION as draftsman or designer desired by Civil Engineer, Swede, 30 years of age, college graduate with one year railroad engineering, surveying; one year as laborer in sulphite and paper mill; two years as assistant superintendent at construction of a sulphite mill; half a year as assistant superintendent at reconstruction of a sulphite mill; two and a half years as draftsman and designer at a sulphite and paper mill and at same time superintendent for construction of big transport system for lumber; one and a half years as draftsman at a paper mill in America. Good draftsman and estimator of general building construction, including reinforced concrete, steel and modern timber structures. At present employed. Prefer position with good opportunities either at sulphite mill or by consulting engineer. Address, Box 5343, care Paper Trade Journal. A-31

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5233, care Paper Trade Journal. tf

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

EXPERT ON COLORS—Practical papermaker, 15 years' experience on various grades, also first class colorman with experience as demonstrator with largest color manufacturers, seeks position as assistant superintendent or in similar capacity. Address, Box 5361, care Paper Trade Journal. S-6

MAN 30, long experience in purchase of printing and paper for large corporation wishes connection with paper mill, or company in similar position where results count. Address, Box 5327, care Paper Trade Journal. A-31

MASTER MECHANIC with 12 years' paper mill experience wishes to make a change. A practical machinist and millwright, up in all Mill Repairs and not afraid of work. Best references. Address, Box 5324, care Paper Trade Journal. A-24

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. A-24

YOUNG MAN: 20, ambitious, familiar with fine papers, Bristols, etc., wishes to connect with concern where good future awaits. Address, Box 5333, care Paper Trade Journal. A-24

WANTED—Position as Assistant Superintendent or Night Boss, by a man of experience on Book, Bond, Kraft and light weight papers; familiar with cylinder machines. Address, Box 5345, care Paper Trade Journal. A-31

FOR SALE

FOR SALE—Kidder press 36 x 48", two color rotary roll product press, never used. Will consider trade for new 30" press. Address, Box 5356, care Paper Trade Journal. A-31

FOR SALE—1 small Jordan Engine. 6 Farnum Drives. Complete Triple-Deck frames for 44 dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE

30-TON GROUNDWOOD MILL

Situated on the St. Lawrence River. Abundant supply of pure water and electrical power. 3 lines of trunk railway. Ample yardroom with sidings. Apply not later than September 18th to Ian A. Ross, 10 Adelaide Street East, Toronto, Ontario. S-14.

For Sale by

Flower City Tissue Mills Company
ROCHESTER, N. Y.

Generator with exciter:
Made by
Westinghouse Electric Company
Pittsburgh, Pa.
62. 5K. V. A.
480 Volts
75.2 Amperes per terminal
3 Phase—25 Cycle—750 R.P.M.
Serial No. 984732.

Pumps:
Made by
Gould Pump Company
No. 2 Direct Connected motor
Single Stage—Single Suction
3" Suction—2" Discharge
Max. Capacity—120 Gal. per min.

Henry H. Worthington
1 Fan Pump
8" Suction—6" Discharge

Nash Vacuum System
Complete for
3 Mould Board Machine (New)

Steel Pulleys
40" Face—108 Dia.—8½ Bore
20" Face— 76 Dia.—4⅝ Bore

2 Reeves Drives Complete
No. 1—Two Belts
Size 9, Class E, Range 4 to 1
No. 2—Two Belts
Size 8, Range 3 to 1
Extra Pair Cones

2—10 Plate Packard Screens
Size of plate 12 x 42

1 Revolving Expansion Reel
81" Wide, cuts 24 x 82"
Made by
Smith and Winchester
South Windham, Conn.

2 Forge Blowers
Buffalo Forge C—4—½ x 5—½ S-6

MISCELLANEOUS

WANTED—One or two Wandell Rotary Screens, also one Save-all. State age, condition and full details, together with lowest price for cash. Address, Box 5377, care Paper Trade Journal. S-14

WANT TO BUY for drop shipment, direct from Mills, All tissue Cull of Toilet Paper, Side Runs of News, Kraft Wrapping 25 lb. up, No. 1 White Sulphite 25 lb. up, M. G. White 20 lb. up, Toilet Paper of all kinds and Parchment Paper 20 lb. up. Direct dealing only. No answer to agents. Address, "Young Selling Organization," P. O. Box 871, Norfolk, Va. A-31

MISCELLANEOUS

SHARTLE

can fill your requirements in used or new machinery.

THE SHARTLE BROTHERS MACHINE CO.
Middletown **Ohio**

TF.

OFF PEAK POWER

About 35,000,000 Kilowatt Hours per year available at Tonawanda, or North Tonawanda, New York.

Will make attractive rate to anyone who can utilize this power.

Location at the foot of navigation of the Great Lakes and the Western Terminus of the New York State Barge Canal.

Rail transportation facilities unsurpassed. Labor and Living Conditions Good.

Tonawanda Power Company
North Tonawanda, N. Y.

0-5

Rebuilt Paper Mill Machinery

IN STOCK AND GUARANTEED
Not Where Is and As Is

FOURDRINIER TISSUE MACHINE—One 68".
FOURDRINIER PARTS—Pusey & Jones 118", 100", Kutter Trowbridge 96".
PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housing with rolls 18"x117". Black & Clawson swing arm housing.
DRYERS—Four 48"x111", thirteen 36"x95", one 36"x80", two 36"x73", four 48"x68", one 84"x67", eleven 42"x66", two 36"x48", four 20"x39".
CHILLED CALENDERS—One 86" six roll, one 82" five roll, one 66" five roll, one 54" five roll, two 58" five roll.
DILLON DOCTOR—For machine calender 60" to 120" face.
SLITTERS & WINDERS—One 120" Warren, one 108" Kidder, one 63" Langston, one 36" Kidder.
REELS—Pusey & Jones two drum, Rice Barton & Fales two drum.
BEATERS—Four N & W 72"x42", one Dilts 62"x50" iron tub, one Jones 62"x52", one Dillon 60"x48", two Emerson 54"x60", three Downingtown 54"x42" iron tub, two Emerson 53"x52", seven Horne 36"x36", two No. 2 Claflins, two No. 1 Claflins.
JORDANS—One Appleton Wagg Majestic, two No. 2 Dillon Improved, one large Horne, two Monarch, one Jones Standard, one Pope Brushing engine.
SCREENS—two 12 plate, five 10 plate, two 8 plate, open side Packer screens. Two 6 plate, one Moore & White auxiliary.
STUFF PUMPS—Deane triplex 9"x8", Goulds triplex 8"x10", Sandusky triplex 4"x6", Moore & White duplex 8"x12", two Noble & Wood self-contained single 6"x16".
REVOLVING SHEET CUTTERS—One 82" and 62" Clark, five 61" Hamblets, four 61" Finlays, one 50" Hamblet diagonal, one 42" Finlay.
REAM CUTTERS—One 48" Acme, one 45" Holyoke Seybold.
SUPER CALENDERS—One 52" Holyoke, one 45", one 42", one 36".
WET MACHINES—Four 72" Bagley & Sewall hydraulic, one 52".
ROTARY BOILERS—Two 8'x20' nearly new.
One Manistee Hog Chipper.
We have a large number of pumps and over five hundred calender, press, and couch rolls in stock.

FRANK H. DAVIS COMPANY
175 Richdale Ave., Cambridge 40, Mass.

XUM

EASTERN MANUFACTURING COMPANY

BLEACHED SULPHITE

THE PAPER TRADE JOURNAL

Largest Circulation and Best Read of all mediums covering the Paper and Pulp Industry

Missisquoi Pulp and Paper Company

SHELDON SPRINGS VERMONT

White and Tinted Bristols—White Blanks—Index Bristol and Specialties in Card Boards.

The Pulp and Paper Trading Co.

21 East 40th Street New York City

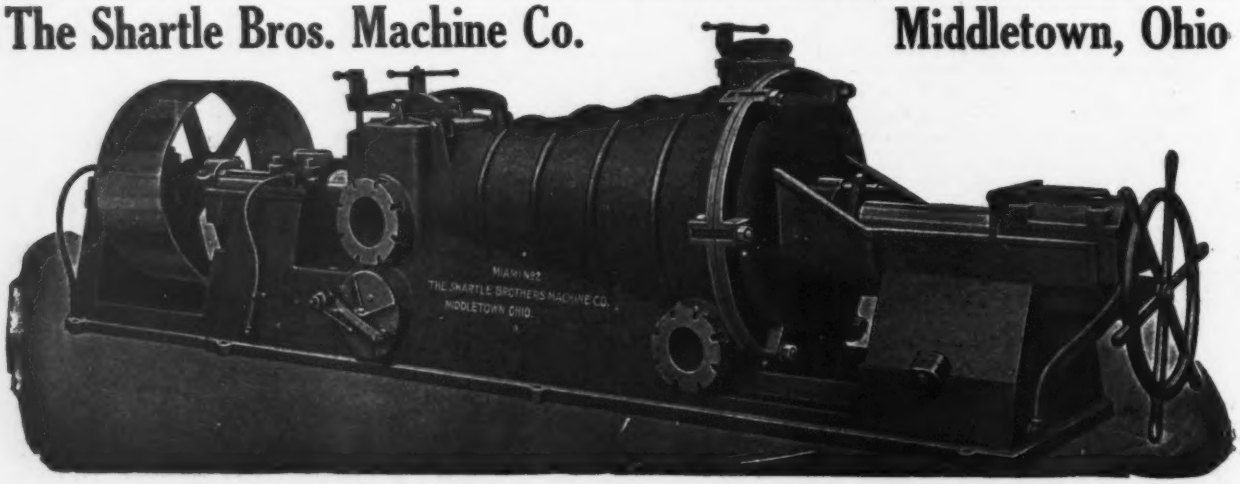
DEALERS IN DOMESTIC CHEMICAL AND MECHANICAL PULPS AND PAPER

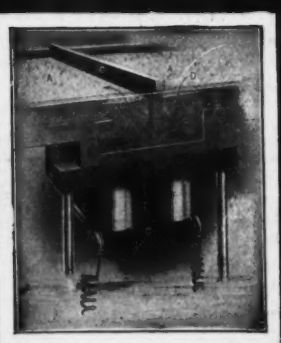
AGENTS FOR

J. & J. Rogers Company, Ausable Forks, N. Y.
Ware Coated Paper Company, Ware, Mass.
Procter & Gamble Distributing Co.
Mills at Augusta, Georgia, and Memphis, Tenn.
Canadian Kraft Limited, Three Rivers, Canada
Dealers in Wayagamack Kraft Pulp
Howard Smith Paper Mills, Montreal, Canada

EASTERN AGENTS of Sulphite Pulp.
Made by Port Huron Sulphite & Paper Co., Port Huron, Mich.

The Shartle Bros. Machine Co. Middletown, Ohio





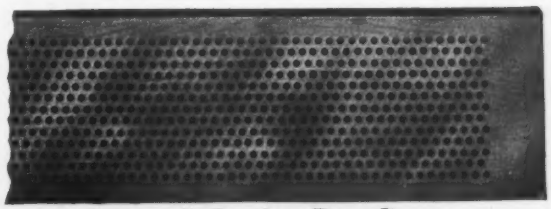
Cleaner Paper

We know that one of the most important factors in paper making is that of cleansing. We designed and constructed our Type "B" IRON EXTRACTOR with a view toward effecting greater satisfaction in the cleansing processes and the success with which this device has met during its ten years on the market is sufficient proof of its efficiency.

We will send Bulletin and all information on request.

2

The Roland T. Oakes Co.
HOLYOKE, MASS



"Lawson" Suction Box Covers

Made of Toughest Close-grained Rock Maple. Special drilling insures maximum suction, prevents all fins.

Paper Roll Plugs, Beater Paddles, Drainer Bottoms, Cogs, Mill Spools and Drums, Trucks, Dollys, Broke and Stock Cars.

MENASHA WOOD SPLIT PULLEY CO. Menasha, Wis.

PAPER MILL SUPPLIES FOR 36 YEARS

Papier-Zeitung

BERLIN SW 11 (GERMANY)

Founded by Carl Hofman, 1876

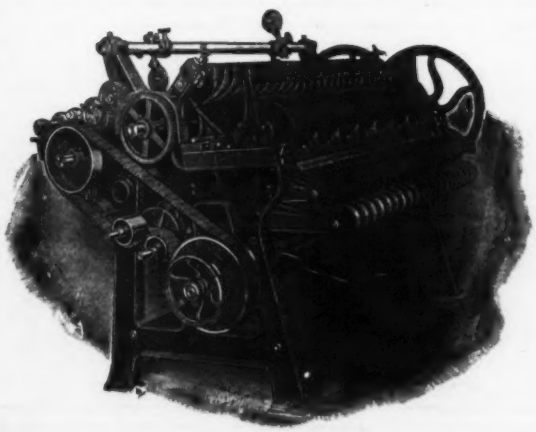
appears three times a week

Covers the whole paper trade (paper making, transforming, stationery). More than 12,500 bonafide subscribers all over the world.

Subscription: 4 Dollars

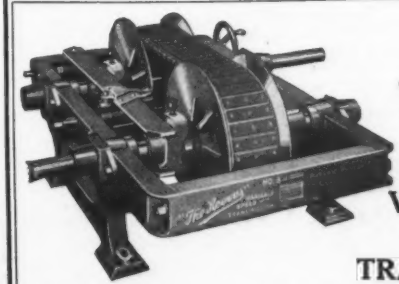
Paper Cutters

Single, Duplex and Diagonal



Cutter Knives Patent Top Slitters

HAMBLET MACHINE CO.
Lawrence, Mass.



"The Reeves"

VARIABLE SPEED TRANSMISSION

It doesn't matter how fine a variation of speed you want or what kind of paper machine you wish to regulate, "THE REEVES" Variable Speed Transmission will do it. It will give the exact speed wanted to suit the condition and requirements of the paper being manufactured.

Valuable and interesting improvements have been made in the construction of "THE REEVES" Transmission, such as

TWO KEYS, FULL LENGTH OF SHAFT between boxes, LARGER ROLLER THRUST BEARINGS, LARGER DISCS, PATENT EQUALIZING COLLARS

all of which tends to give larger wearing surface, greater carrying capacity and longer life. We are furnishing Special High Duty Ball Bearings for main boxes if desired. They can be applied to any REEVES Transmission now in use.

It is the only Variable Speed device with 25 years' service record.

REEVES PULLEY COMPANY
COLUMBUS, INDIANA

1

FREDERICK L. SMITH
21 EAST 40TH STREET, NEW YORK
PULP AND PAPER MILL ENGINEER

GEORGE F. DREW
MILL ARCHITECT AND ENGINEER
Consulting and Operating
BRUNSWICK, MAINE
SPECIALTY: Pulp, Paper and Saw Mills
Cotton, woolen, worsted, cordage, silk mills, and their equipment. Appraisals, adjustments.

E. BUTTERWORTH & CO., Inc.
CHARLES H. WOOD, Pres. *LEWIS JENNINGS, Treas.*
Boston Office, 136 Federal St. New York Office, 1123 Broadway
PAPER MAKERS' SUPPLIES
Agents for "S" Brand and Snow Brand Bleached Sulphite Pulp

THOMAS L. TOMLINES & SON
CONSULTING ENGINEERS
ASSOC. M. AM. SOC. C. E.; M. AM. SOC. M. E.
Paper, Pulp and Fibre Mills, Hydraulic Developments, Hydro-Electric Plants
317-319 CITY BANK BLDG., SYRACUSE, N. Y.
Steam Power Plants, Plans and Specifications, Efficiency Engineering
CONSULTATION AND REPORTS

HARDY S. FERGUSON CONSULTING ENGINEER
Member AM. SOC. C. E., Member AM. SOC. M. E., Member Eng. Inst. Can.
280 FIFTH AVENUE, NEW YORK CITY
Paper, Pulp and Fibre Mills, Including Building and Complete Mechanical Equipment, Water Power Development, Dams, Storage Reservoirs and Other Hydraulic Structures, Examinations, Reports, Estimates of Cost, Designs, Specifications, Valuations

WILLIAM T. FIELD
Consulting Engineer
286 Broadway, New York, N. Y.
Flower Bldg., Watertown, N. Y.
DESIGNS ESTIMATES REPORTS

GEORGE F. HARDY
M. AM. SOC. C. E., M. AM. SOC. M. E., M. ENG. INST. CAN.
Mill Architect and Consulting Engineer
Langdon Building, 309 Broadway, New York
SPECIALTY: Paper, Pulp and Fibre Mills, Water Power Developments, Steam Power Plants, Plans and Specifications Evaluations, Reports, Consultation
Cable Address: "Hardistock," A B C 5th Edition, Bedford, McNeill. Western Union—Bentley's.

VITALE & ROTHERY
FOREST ENGINEERS
527 Fifth Avenue New York, N. Y.

J.H. WALLACE & COMPANY. TEMPLE COURT BUILDING NEW YORK CITY, U.S.A. CABLES, TRIPLEX, N.Y.
PULP PAPER AND POWER PLANTS
ENGINEERS & CHEMISTS INDUSTRIAL DESIGN PLANT IMPROVEMENT LABORATORY TESTS

J. O. Ross Engineering Corp.
30 E. 42nd St.
CHICAGO NEW YORK CITY BOSTON
VAPOR ABSORPTION SYSTEMS

ATLANTA BALTIMORE BOSTON CHICAGO CHARLOTTE, N. C. CLEVELAND DETROIT
SAN FRANCISCO

MORSE CHAIN DRIVES
A POWER SAVER FOR POWER USERS
Morse Chain Co. Ithaca, N. Y.
HIGH SPEED SILENT RUNNING FLEXIBLE GEARING FOR POWER TRANSMISSION.
Address Nearest Office
PHILADELPHIA
KANSAS CITY MINNEAPOLIS MONTREAL NEW YORK ST. LOUIS PITTSBURGH

SAFE, RELIABLE
TIMBER ESTIMATES
at a few cents an acre
JAMES W. SEWALL
Old Town, Maine — *Forest Engineer* — Davidson Bldg., Washington, D. C.
Largest Cruising House in America

THE BRADLEY SALES AGENCY
Is open to listings of Eastern Canadian Timberlands. Hardwood and Freehold Pulpwood Lands are in active demand at present.
205 St. James St., Montreal, P. Q.
512 Bank of Montreal Bldg.

SLITTERS and SPECIAL MACHINES
for use in paper industry
C. BENNINGHOFEN & SONS
Hamilton, Ohio
Send us your requirements regardless of what they may be

"A type to meet every stoker need"
SANFORD RILEY STOKER CO.
WORCESTER, MASS.
Makers of
RILEY UNDERFEED STOKERS
BOSTON NEW YORK CINCINNATI PHILADELPHIA CHICAGO PITTSBURGH ST. PAUL
TRADE MARK Rx REGISTERED
MURPHY IRON WORKS
DETROIT, MICH.
Makers of
MURPHY AUTOMATIC FURNACES
BUFFALO CLEVELAND DENVER

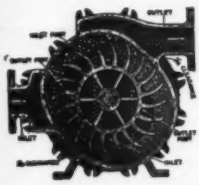
THE
MANAGEMENT ENGINEERING AND DEVELOPMENT CO.
7TH FLOOR CITY NATIONAL BANK BLDG.,
DAYTON, OHIO.

DESIGN, CONSTRUCTION AND OPERATION
OF
PULP, PAPER AND FIBRE MILLS
WATERPOWER DEVELOPMENT
·STEAM POWER PLANTS·

PLANS AND SPECIFICATIONS
EVALUATIONS AND REPORTS
··CONSULTATIONS···

Stebbins Engineering & Manufacturing Co.
Watertown, N. Y.
Designers, Equippers and Operators
Sulphite, Soda and Sulphate Pulp Mills
Digester and All Acid Proof Linings

Vapor Absorption Systems, Fuel Economizers, Air Conditioning Apparatus, Heating and Ventilating Systems
Sturtevant
PUTS AIR TO WORK
HYDE PARK BOSTON, MASS.



EFFICIENT SUCTION ROLL OPERATION demands the NASH HYTOR
THE NASH ENGINEERING CO.
SOUTH NORWALK, CONN.

CRANE
BRASS VALVES

UNITED STATES TESTING COMPANY, Inc.
316 Hudson Street CHEMISTS New York City
Microscopical Examination, Physical Tests and Chemical Analysis of Paper. Official Chemists to the American Paper and Pulp Association, Association of American Woodpulp Importers, etc.
We analyze Fuels, Chemicals, Dyestuffs, Intermediates, Gasoline, Oils, Paints, Soaps, Greases, Waxes, Water for Drinking or Boiler Purposes, Woodpulp, etc.

SHERMAN PAPER COMPANY
Manufacturers of Roll Newsprint
ENTIRE PRODUCT FOR 1922 CONTRACTED
Mills at
Felts Mills, Great Bend and Lefebvre, N. Y.
Main Office
Trust Co. Building, Watertown, N. Y.

"Ask Your Neighbor What He Thinks of Them."

67 JENSSEN
Two-Tower Acid Systems now in operation or building.
Normal Prices Today Govern Our Installations
Every second Sulphite Mill on this continent is using our Towers and Making Money by Making Better Acid.
G. D. Jenssen Company
200 5th Ave. New York, N. Y.

Charles W. Bell
Consulting Specialist
In the Manufacture of PAPER BOX BOARD, TEST BOARD, FIBRE BOARD AND STRAWBOARD
And their fabrication into SHIPPING CONTAINERS, (Corrugated and Solid Fibre) FOLDING BOXES, etc.
Forty years' practical experience in all departments—Equipment, processes, formulae, trade customs, management, order and planning system. Markets, sales, estimating, prices, contracts, materials, supplies, collections, arbitrations, receivership and valuations.
"Let Me Help Solve Your Problems"
Consultation Strictly Confidential. Correspondence Solicited
Address—1047 Grand Avenue, Dayton, Ohio

STRATFORD PAPER CO. 160 Cornelison Ave. Jersey City, N. J.
High Grade Fourdrinier Tissues in Stock for Immediate Delivery

Paper Stock
NOW IS THE TIME TO BUY OUR RAW MATERIALS
Out of our forty different grades of paper stock you are assured a steady, reliable source for procuring raw materials in practically every branch of paper making.
Having specialized for 35 years in this one field you can depend upon a clean, well-packed, uniform product throughout; fulfillment of delivery promises; and because of our output of 300 tons daily, big tonnage at all times. Write us your wants.
Mendelson Bros. Paper Stock Co., General Offices: 910 So. Michigan Ave., Chicago, Ill. Long Distance Phones, Harrison 2840 and 5557

XUM

Lapeer Manufacturing Corporation

Mills:
Austin, Pa.

Sales Office:
527 Fifth Ave., New York

RED CAP FIBRE

AND OTHER

HIGH GRADE SULPHITE WRAPPING PAPERS

LINDSAY BROS., Inc.

Keystone Mill Division

MANUFACTURERS OF

MANILA, WHITE AND KRAFT

WAXED PAPERS

SURFACE AND DRY WAXING

804-806-808 Sansom Street
PHILADELPHIA, PENNA.

JAMES ROSENBERG, Pres. L. W. BOWMALL, Vice-Pres.

AMERICAN WOODPULP CORPORATION

FOREIGN AND DOMESTIC

CHEMICAL and MECHANICAL WOODPULPS

Rags, New Cuttings, Bagging, Etc.

New York—347 Madison Ave.

BRANCHES:
Stockholm—Sweden
Helsingfors—Finland
Holyoke—J. B. Woodruff, Inc.
Kalamazoo—F. D. Haskell
Dayton—R. R. Reed

BLUE RIDGE FIBRE

Bleached Soda Pulp

Manufactured and sold by

COLUMBIAN PAPER COMPANY

BUENA VISTA, VIRGINIA

Samples and prices upon application

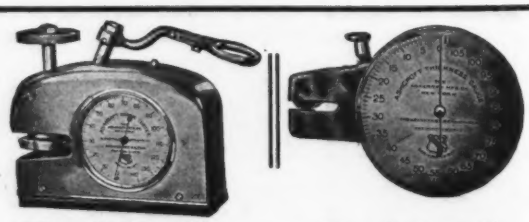
PAPER MAKERS CHEMICAL CO.

WESTERN PAPER MAKERS CHEMICAL CO.

EASTON HOLYOKE KALAMAZOO
JACKSONVILLE PENSACOLA ST. AUSTELL

CLAYS ROSIN SIZE
SATIN WHITE FOAM KILLER

FELT SOAP and OTHER SPECIALTIES



The Ashcroft Paper Tester

The Ashcroft Thickness Gauge

Actual necessities for all those who make, sell or purchase paper in any form. The thousands in daily use testify to their efficiency.

THE ASHCROFT MFG. CO.

119 West 40th Street New York
29 North Jefferson Street Chicago, Ill.
19 High Street Boston, Mass.

Canadian Sales Agents: The Canadian Fairbanks Morse Co., Montreal and Toronto.

THE WATERBURY FELT CO.

FELTS and JACKETS

For Every Grade of Paper and Pulp

Correspondence and Orders Solicited

Manufactured at
SKANEATELES FALLS
New York

SUPERIOR CHEMICAL CO.

JOLIET, ILLINOIS

Manufacturers

PAPER MAKERS' and FILTER

ALUM

New 1923 Edition

OF

LOCKWOOD'S DIRECTORY

OF THE

PAPER AND ALLIED TRADES

Ready for delivery about September 15th

Contents of the 48th Annual Edition

All the paper and pulp mills in the United States, Canada, Mexico, Cuba and South America

City Address of Mills and Mill Supply Houses
Classified List of Paper Mill Products, Canada
Classified List of Paper Mill Products, United States
Classified List of Pulp Mill Products, Canada
Classified List of Pulp Mill Products, United States
Coated Paper Manufacturers
Envelope Manufacturers
Glazed and Coated Paper Manufacturers
Idle Mills
Mill Officials
Pad Manufacturers
Paper Merchants, Canada
Paper Merchants, United States
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers
Paper and Pulp Mills in Canada
Paper and Pulp Mills in United States
Paper Mills in South America
Paper Specialties
Papeterie Manufacturers
Prepared Roofing Paper Manufacturers
Stationers in Canada
Stationers in Cuba
Stationers in United States
Statistical Table of Mills
Tablet Manufacturers
Tag Manufacturers
Toilet Paper Manufacturers
Trade Associations
Twine Manufacturers in United States and Canada
Vegetable Parchment Paper Manufacturers
Wall Paper Printers
Watermarks and Brands
Waxed Paper Manufacturers

Send in your order now to insure prompt delivery.

Price $7.00 a copy, express prepaid.

PUBLISHED BY THE

LOCKWOOD TRADE JOURNAL CO., INC.

10 East 39th Street, New York

XUM

The Union Sulphur Company

Producers of the Highest Grade
Brimstone on the market . .

ABSOLUTELY FREE FROM ARSENIC OR SELENIUM

The Largest Sulphur Mine in the World

CALCASIEU PARISH, LOUISIANA

Main Offices: Frasch Building, 33 Rector Street, New York

ALUM

FOR THE PAPER MAKER

Manufactured by

The Jarecki Chemical Co.

QUALITY SERVICE

Sole Selling Agents

ISAAC WINKLER & BRO.

CINCINNATI : : : : NEW YORK

"DRAPER" FELTS

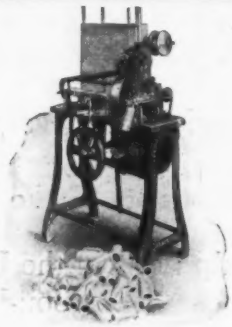
For Any Grade of Paper or Pulp

ARE GUARANTEED

To Give Entire Satisfaction

MANUFACTURED BY

DRAPER BROS. CO., CANTON, MASS.



Patented { June 24, 1913. / August 10, 1915.

GRISSINGER

Patented

AUTOMATIC TUBE MACHINE

Wire Stitched Tube

TOILET PAPER MACHINERY

GRISSINGER MACHINE WORKS
PHILADELPHIA, PA.

STORAGE TANKS

For Sulphite Mills

More than sixty years' experience enables us to meet your requirements on any tank problem. Our expert crews are at your service for any installation of our products.

Permit us to estimate on them.

G. WOOLFORD WOOD TANK MFG. CO.
LINCOLN BLDG. PHILADELPHIA, PENN.

When you think of Wood Tanks Think Woolford Tanks.

The Paper Trade Journal

has the largest circulation
of any magazine covering
the Paper and Pulp field

MEMBER AUDIT BUREAU
OF CIRCULATIONS

"DAYTON" BEATING ENGINES

ARE UNEXCELLED
FOR
HEAVY DUTY OR FAST TRAVEL

DESIGNED CORRECTLY
BUILT CAREFULLY
DELIVERED PROMPTLY

GET OUR ESTIMATES.

Dayton Beater & Hoist Co.
Dayton, Ohio

1

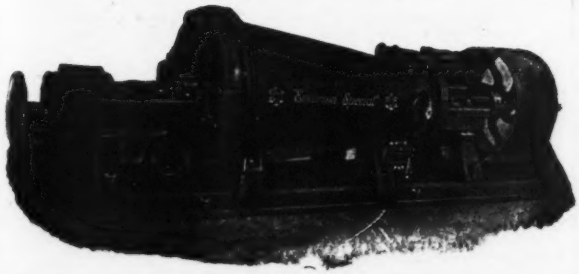
FOREIGN and DOMESTIC

CASTLE, GOTTHEIL & OVERTON

Paper Stock
New Cuttings and Rags
Jute Stock
Sizing, Sulphite and Soda Pulps

200 FIFTH AVE. NEW YORK

EMERSON MANUFACTURING CO. LAWRENCE MASS.



See the Second-Hand Machinery ads and note the ABSENCE of

EMERSON BEATING ENGINES

They seldom wear out and are never thrown out. PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

does its work with half the power required by others of no greater capacity.

WRITE FOR DETAILS

WE specialize in durable Fourdrinier Wires and Cylinder Wires in any metal desired up to and including 120 mesh in plain woven, double warp, triple chain, and twisted weaves.

Save two-thirds the cost and three-quarters of the expense of putting on brass and bronze wires by using our nickel alloy wires.

Joseph O'Neill Wire Works

Port Chester, N. Y.

Established 1906

F. L. Smithe Machine Co. Inc.

MANUFACTURERS OF

ENVELOPE MACHINERY

for making any style envelope, regular or special. Printed, stamp embossed and tissue lined envelopes.

Also die presses, tension machines, and metal clasp machines, and all other machinery used in manufacturenvelopes.

Designing, pattern making and machine work.

150 Eleventh Avenue, New York City, New York, U. S. A.

For reliable running and average long life

Lindsay Fourdrinier Wires

ARE UNSURPASSED

We make them for the largest and fastest machines.

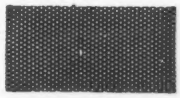
Cylinder Wires all sizes.

The Lindsay Wire Weaving Co.

COLLINWOOD STA. CLEVELAND, OHIO

Perforated Metal Screens

For Pulp and Paper Mills



.065 Inch Round

STEEL, COPPER, BRASS, BRONZE and other Alloys

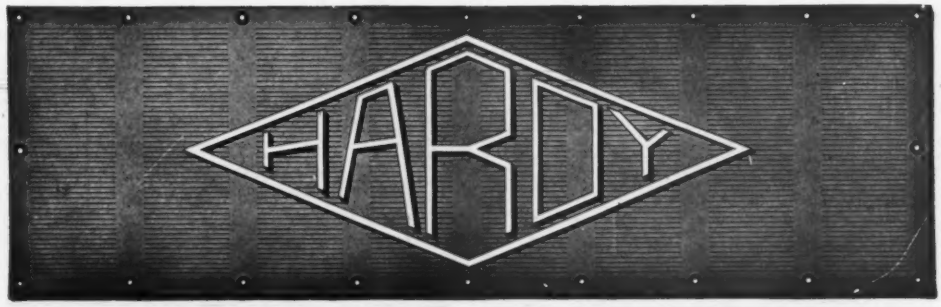
⅛ x ½ Inch Slots

punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

CHARLES MUNDT & SONS

53-65 FAIRMONT AVE. JERSEY CITY, N. J.

WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.



SLITTERS AND WINDERS
SAMUEL M. LANGSTON COMPANY
CAMDEN, N. J.

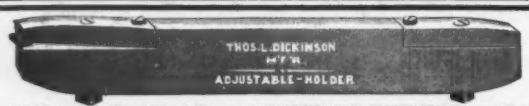
Established 1895
DANIEL M. HICKS
(INCORPORATED)
PAPER MILL SUPPLIES
200 FIFTH AVENUE, NEW YORK CITY

AGALITE FILLER
UNITED STATES TALC CO.
GOUVERNEUR NEW YORK

Salomon Bros. & Co.
IMPORTERS OF
All Grades of Rag and Paper Stock
200 FIFTH AVENUE, NEW YORK
COTTON WASTE :: LINTERS :: RAMIE

WILLIAM B. DILLON
DILLON & BARNES
Paper Mill Products and Supplies
52 VANDERBILT AVENUE, NEW YORK
Telephone, 7353 Murray Hill

Penn Paper and Stock Company
PACKERS OF ALL GRADES OF
WASTE PAPER
240 N. FRONT STREET PHILADELPHIA



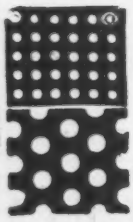
Special Shaped Carbon, Black Diamond POINTS FOR TURNING Paper, Cotton Chilled Iron and Hardened Steel Calender Rolls, Hard Rubber, Fibre, etc. Successor to John Dickinson. Established 1796.
Agents for Great Britain, C. W. BURTON, GRIFFITHS & CO., Ludgate Square, London.
Manufactured by THOS. L. DICKINSON 25 Gold St. NEW YORK

Manufacturers of All Special Small Roll Products

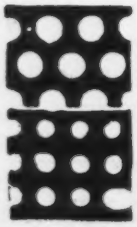
Adding Machine, Cash Register, Die Wiping, Hand Rolls, Etc., Etc.
PAPER MANUFACTURERS CO., Inc., Phila., Pa.

"WATERBURY"
Felts-Jackets
ORISKANY, N. Y.
OUR TIGHT FITTING, DIAMOND "W" JACKETS WILL NOT LICK UP AT ANY SPEED
1869 {MADE ONLY BY / GUARANTEED BY} 1922
H. Waterbury and Sons Company, Oriskany, N. Y.

UNION TALC COMPANY
Finest Grades of Agalite
132 Nassau Street New York



MANHATTAN PERFORATED METAL CO.
Office and Works: 237-239 Centre St., New York
PERFORATORS
of COPPER, BRASS, ZINC, ALUMINUM, TIN, STEEL, IRON, Etc.
Write for Copper, Brass, Tin or Aluminum Catalog.
Brass and Copper Centrifugal and Juice Strainer Plates a Specialty



TRADE **CAMACHINE** MARK
SLITTERS AND ROLL-WINDERS
WINDERS REWINDERS
CAMERON MACHINE CO. BROOKLYN, N.Y.

FRANKLIN PAPER CO. HOLYOKE, MASS.
MANUFACTURERS OF
Index Bristols, White Bristol Blanks, Etc.

WOOD FLOUR
Various degrees of fineness and either fibrous or granular. Made from first growth Spruce and Pine, by approved processes.
UNION WOOD FLOUR CO., INC.
Hudson Falls, N. Y.

BELLE ALKALI COMPANY, Belle, W. Va.
PURE CHLORINE In cylinders and tanks
BLEACH BELLE BRAND
CAUSTIC SODA 76%—Solid and Flaks
Arnold Hoffman & Co. Inc., Sole Agents, PROVIDENCE PHILADELPHIA BOSTON NEW YORK CHARLOTTE

BAKER MANUFACTURING CORPORATION

Formerly

BAKER & SHEVLIN COMPANY

Sole Manufacturers of

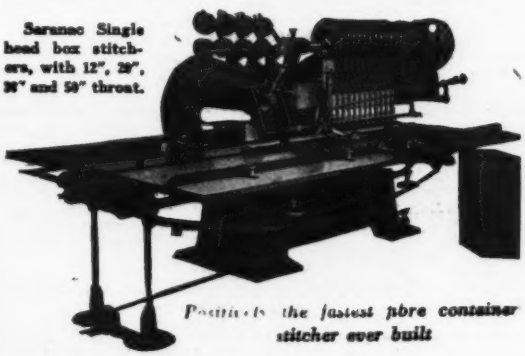
THE MAGAZINE GRINDER

Have you seen the article which was read before the Paper Makers' Convention on Relative Efficiency of the Automatic Magazine and Pocket Grinders? If not, and you are interested, kindly advise and we will send you a copy.

BAKER MANUFACTURING CORPORATION, Saratoga Springs, N.Y.

25 to 40 shipping containers per minute can be made on a

Saranac Automatic Multiple Head Stitcher



Saranac Single head box stitchers, with 12", 20", 36" and 50" throat.

Positively the fastest fibre container stitcher ever built

IT is equipped with twelve stitching heads, so that any number from 1 to 12 staples can be driven at one time. Either a single or double row of staples, or single row with the tie stitch, are automatically driven. It takes less than five minutes to change from the largest to smallest size containers.

Write for Full Particulars.

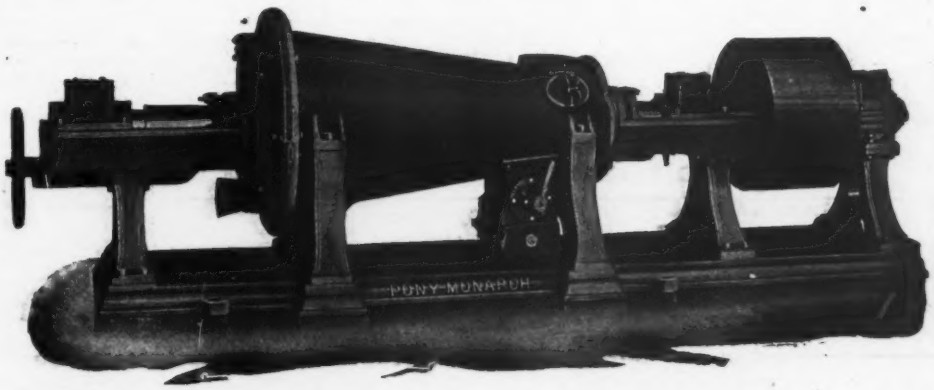
We also manufacture Bottom Sealing Machines.

Saranac Machine Company

Benton Harbor, Michigan

WE MAKE BEATERS AND JORDANS OF QUALITY

SIX SIZES OF JORDANS, BEATERS, FROM ¾ LBS. TO 3000 LBS.



The Noble & Wood Machine Co., Hoosick Falls, N.Y.

CLASSIFIED INDEX TO ADVERTISEMENTS

ACID SYSTEMS. Page
G. D. Jenssen Company ... 73
ADDING MACHINE ROLLS.
Paper Manufacturing Co. ... 78
AGALITE.
Union Talc Co. ... 78
U. S. Talc Co. ... 78
ALUM.
The Kalbfleisch Corp. ... —
Pennsylvania Salt Mfg. Co. ... 84
Superior Chemical Co. ... 74
Winkler Bros., Inc. ... 76
ARCHITECTS AND ENGINEERS.
George F. Drew ... 72
Hardy F. Ferguson ... 72
William T. Field ... 72
George F. Hardy ... 72
G. D. Jenssen Company ... 73
Management Engineering and Development Co. ... 73
F. L. Smith ... 72
Stebbins Engineering Co. ... 73
Thomas L. Tomlines & Son ... 72
Vitale & Rothery ... 72
Joseph H. Wallace & Co. ... 72
ASBESTINE PULP.
International Pulp Co. ... Front Cover
ASH-HANDLING MACHINERY.
Jeffrey Mfg. Co. ... 8
BALL MILLS.
The Crossley Machine Co. ... —
BARKERS.
Valley Iron Works ... —
BED PLATES.
Dowd Knife Works, R. J. ... 55
BEARINGS (Collar Oiling).
Hill Clutch Co. ... —
BEATER PADDLES.
Menasha Wood Split Pulley Co. ... 71
BEATING ENGINES.
Appleton Machine Co., The ... 57
Beloit Iron Works ... 25
Claflin Engineering Co. ... —
Dayton Beater & Hoist Co. ... 76
Dillon Machine Company, Inc. ... 82
Dilts Machine Works, Inc. ... 12
Downingtown Mfg. Co. ... 82
Emerson Mfg. Co. ... 77
Noble & Woods Machine Co. ... 79
Valley Iron Works ... —
BEATER ENGINE BARS.
Dowd Knife Works, R. J. ... 55
BELTING.
Goodyear Tire & Rubber Co. ... 35
Republic Rubber Co. ... —
BOILERS.
Heine Boiler Co. ... 29
BRONZE CASTINGS.
Hyde Windlass Co. ... —
BUCKETS (Elevator).
Hendrick Mfg. Co. ... 9
BUNDLING MACHINES.
Hudson-Sharp Machine Co. ... —
CALENDER ROLLS.
Appleton Machine Co., The ... 57
Farrel Foundry & Machine Co. ... 31
Lobdell Car Wheel Co. ... 44
Norwood Engineering Co. ... 5
B. F. Perkins & Sons, Inc. ... 11
Textile Finishing Machinery Co. ... 80
CARBON TOOLS.
Thomas L. Dickinson ... 78
CASEIN.
Casein Mfg. Co. ... —
CENTRIFUGAL PUMPS.
Valley Iron Works ... —
CHAINS.
Jeffrey Mfg. Co. ... 8
CHEMICALS, COLORS, ETC.
Arnold Hoffman & Co., Inc. ... 78
Du Pont de Nemours Co., E. I. ... —
Heller & Merz Co. ... 13
Kuttroff, Pickhardt & Co. ... 83
White Tar Aniline Corporation, The ... —
C. K. Williams & Co. ... 84
CHEMISTS.
United States Testing Co. ... 73
CLAY.
Atterbury Bros. ... Front Cover
John W. Higman Co. ... —
Miner Edgar Co., The ... 65
Paper Makers Chemical Co. ... 74
Star Clay Co. ... 84
Western Paper Makers' Chemical Co. ... 74
CLUTCHES (Friction, Etc.).
Hill Clutch Co. ... —
COGS.
N. F. Bowsher Co. ... 84
Menasha Wood Split Pulley Co. ... 71
COMPRESSORS (Air).
The Nash Engineering Co. ... 73
CONVEYORS (Pulpwood).
Jeffrey Mfg. Co. ... 8
Weller Mfg. Co. ... —
CORDAGE.
Columbian Rope Co. ... —
CORES.
Elixman Paper Core Co. ... 7
CRANES (ELECTRIC).
Shepard Electric Crane & Hoist Co. ... 58
CREPEING MACHINES.
Hudson-Sharp Machine Co. ... —
CUTTERS.
Smith & Winchester Mfg. Co. ... 10
DIE CUTTERS.
Hoggson & Pettis Mfg. Co. ... —
Independent Die Co., Inc. ... 6
DIGESTERS.
American Welding Co. ... —
Biggs Boiler Works Co. ... —
DRINKING CUPS.
F. N. Burt Company, Ltd. ... 10
Vortex Mfg. Co. ... 6
DRIVES.
Westinghouse Electric & Mfg. Co. ... —
DRIVES (Gear).
Farrel Foundry & Machine Co. ... 31
DRIVES (Silent Chain).
Morse Chain Co. ... 72
DYERS
Biggs Boiler Works Co. ... —
DRYER EXHAUSTS.
The Nash Engineering Co. ... 73
DRYING SYSTEMS.
Open Coil Heater & Purifier Co. ... —
W. F. Pickles ... 4
Ross Engineering Co., J. O. ... 33 and 72
B. E. Sturtevant Co. ... 73
DYES, ANILINE.
Heller & Merz ... 13
National Aniline & Chemical Co. ... —
White Tar Aniline Corporation, The ... —
DYE STUFFS.
Du Pont de Nemours & Co., E. I. ... —
ENVELOPE MACHINES.
Potdevin Machine Co. ... 9
F. L. Smithe Machine Co. ... 77
FAN AND BLOWING SYSTEMS.
B. F. Sturtevant Co. ... 73
FAN PUMPS.
Valley Iron Works ... —
FELTS AND JACKETS.
Albany Felt Co. ... —
Appleton Woolen Mills ... 9
Bulkley, Dunton & Co. ... 65
Draper Bros. Co. ... 76
Fitchburg Duck Mills ... 2
F. C. Huyck & Son ... 13
Knox Woolen Company ... 65
Lockport Pelt Co. ... —
Orr Felt & Blanket Co. ... 67
Shuler, Benninghofen Co. ... 84
Waterbury Felt Co. ... 74
Waterbury & Sons Co., H. ... 78
FELT ROLLS.
Rodney Hunt Machine Co. ... —
FILTERING SYSTEMS.
Norwood Engineering Co. ... 5
FLOOR COVERINGS.
L. Sonneborn & Sons ... —
FLOOR HARDENER (Concrete).
L. Sonneborn & Sons ... —
FOLDING MACHINES.
Hudson-Sharp Machine Co. ... —
FOURDRINIER WIRES.
Appleton Wire Works ... 83
Buchanan & Bolt Wire Co. ... 67
Cabble Excelsior Wire Mfg. Co. ... 83
Cheney, Bigelow Wire Works ... 82
Eastwood Wire Mfg. Co. ... 83
Green Bay Wire Works ... —
Lindsay Wire Weaving Co. ... 77
Joseph O'Neil Wire Works ... 77
The W. S. Tyler Company ... 83
FURNACE (Automatic).
Murphy Iron Works ... 72
GAUGES (Caliper).
Farrel Foundry & Machine Co. ... 31
GAUGES (Pressure, Indicating and Recording).
Bristol Co., The ... 59
GUMMING AND GLUING MACHINERY.
Potdevin Machine Co. ... 9
HOISTS (ELECTRIC).
Shepard Electric Crane & Hoist Co. ... 58
INVESTMENTS.
Taylor, Bates & Co. ... 65
IRON EXTRACTORS.
Oakes Co., Roland ... 71
KNIVES, ETC.
Bolton & Son, J. W. ... 9
Dowd Knife Works, R. J. ... 55
Machinery Co. of America ... —
LUBRICANTS.
Vacuum Oil Co. ... 40 and 41
MICROMETERS.
Ashcroft Mfg. Co. ... 74
E. J. Cady Co. ... —
Foreign Paper Mills, Inc. ... 3
MICROMETER (CALIPERS.)
Lobdell Car Wheel Co. ... 44
MILL COGS.
N. F. Bowsher & Co. ... 84
MOTORS.
B. F. Perkins & Sons, Inc. ... 11
MOTOR TRUCKS.
Packard Motor Car Co. ... —
OILS AND GREASE.
Vacuum Oil Co. ... 40 and 41
PACKING.
Jenkins Bros. ... 4
PAPER BAG MACHINERY.
Potdevin Machine Co. ... 9
Smith & Winchester Mfg. Co. ... 10
PAPER BAG MANUFACTURERS.
Lawrence Bag Co. ... 59
Schorsch & Co. ... 67
PAPER BOX BOARDS.
C. L. La Boiteaux Co. ... 5
PAPER CORES.
Elixman Paper Core Co. ... 7
PAPER CUTTERS.
Hamblet Machine Co. ... 71

Super Calenders
Breaker Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

CLASSIFIED INDEX TO ADVERTISEMENTS

PAPER DEALERS. Page
Fernstrom Paper Co. —
R. F. Hammond Front Cover

PAPER EXPORTERS.
Hudson Trading Co. 2
Katzenstein & Keene, Inc. 4
Parsons Trading Co. Front Cover

PAPER MANUFACTURERS.
Bayless Mfg. Co. 74
Becker Paper Corporation 37
Brown Company 5
Collins Mfg. Co. 7
Diamond State Fibre Co. Front Cover
Eastern Mfg. Co. 70
Eaton Dikeman Co. 12
Fort Howard Paper Co. 11
Franklin Paper Co. 78
Hammermill Paper Co. —
Hanna Paper Corporation 5
Howard Paper Co. 61
Missisquoi Pulp & Paper Co. 70
Mountain Mill Paper Co. 61
St. Regis Paper Co. 5
Sherman Paper Co. 73
Stratford Paper Co. 73
Wausau Sulphate Fiber Co. —
West Virginia Pulp & Paper Co. 61

PAPER AND PULP MACHINERY.
Appleton Machine Co. 57
Bagley & Sewell Co. —
Baker Mfg. Co. 79
Beloit Iron Works. 25
Bird Machine Works. 23
Black-Clawson Co. 11
Clark-Aiken Co. 12
Frank H. Davis. 69
Downingtown Mfg. Co. 82
Glens Falls Machine Works. 56
Hudson-Sharp Machine Co. —
Improved Paper Machinery. 55
Sandy Hill Iron & Brass Co. —
Shartle Bros. Machine Co. 69 and 70
Smith & Winchester Mfg. Co. 10
Trimbey Machine Works. 44
Valley Iron Works. —
Waterville Iron Works. 2

PAPER MILL AGENTS.
Dillon & Barnes. 78
McIver, Dana T. 2

PAPER AND PULP MILL BROKERS.
Gibbs-Brower Co. —

PAPER SPECIALIST.
Charles W. Bell. 73

PAPER STOCK.
Atterbury Bros. Front Cover
Butterworth & Co., Inc., E. 72
Castle, Gottheil & Overton. 76
Gumbinsky Bros. 84
Hicks, Daniel M. 78
Mendelson Bros. Paper Stock Co. 73
Penn Paper & Stock Co. 78
Salomon Bros. & Co. 78
Train-Smith Co. Front Cover

PAPER TESTERS.
Ashcroft Mfg. Co. 74
E. J. Cady Co. —
Foreign Paper Mills, Inc. 3
B. F. Perkins & Sons, Inc. 11
Thwing Instrument Co. 3
Valley Iron Works. —

PAPER TUBE MACHINERY.
Dietz Machine Works. 8
Grissinger Machine Works. 76

PAPER WAXING MACHINERY.
Farrel Foundry & Machine Co. 31
Potdevin Machine Works. 9

PERFORATING MACHINES.
Dietz Machine Works. 8

PERFORATED METAL.
Harrington & King Perforating Co. 67
Hendrick Mfg. Co. 9
Manhattan Perforated Metal Co. 78
Charles Mundt & Sons. 77

PIPE (Genuine Wrought Iron).
A. M. Byers. —
Reading Iron Co. —

PRESS ROLLS.
Rodney Hunt Machine Co. —

PLUGS.
Menasha Wood Split Pulley Co. 71

PLUGS (Wood).
O. L. Bartlett. 11

PULP STONES.
International Pulp Stone Co. Front Cover
Lombard & Co. 83

PUMPS.
Frederick Iron & Steel Co. —
Hayton Pump & Blower Co. 7
Hudson-Sharp Machine Co. —

PUMPS (Vacuum).
The Nash Engineering Co. 73

PRESSURE BULKERS.
B. F. Perkins & Sons, Inc. 11

RAG CUTTERS.
B. F. Perkins & Sons, Inc. 11
Taylor, Stiles & Co. —

RECORDING INSTRUMENTS.
Bristol Co. —

RECORDING TACHOMETERS.
Bristol Co. —

ROLL GRINDERS.
Lobdell Car Wheel Co. 44

ROSIN.
Hercules Powder Co. —

ROSIN SIZE.
Arabol Mfg. Co. 83
Paper Makers Chemical Co. 74
Western Paper Makers Chemical Co. 74

ROTARY BLEACHING BOILERS.
Biggs Boiler Works Co. —

SAVEALLS.
Bird Machine Co. 23

SATIN WHITE.
The Kalbfleisch Corp. —
Paper Makers Chemical Co. 74
Western Paper Makers Chemical Co. 74

SCALES (Paper).
Fred Baker —
E. J. Cady & Co. —
Foreign Paper Mills, Inc. 3

SCREENS.
Beloit Iron Works. 25
Bird Machine Co. 23
Central Mfg. Co. —
Wm. A. Hardy & Sons Co. 77
Union Screen Plate Co. 81

SHREDDERS (Pulp and Paper).
Valley Iron Works. —

SKYLIGHTS.
F. Van Noorden & Co. 83

SLASHERS.
Ryther & Pringle Co. —

SLITTERS AND REWINDERS.
Beloit Iron Works. 25
C. Benninghofen & Son. 72
Cameron Machine Works. 78
Dietz Machine Works. 8
Grissinger Machine Works. 76
Hudson-Sharp Machine Co. —
Samuel M. Langston Co. 78

SPLICING TISSUES.
E. M. Sargeant Co. —

STARCH.
Corn Products Refining Co. 12

STEAM SPECIALTIES.
Crane Co. 73
Open Coil Heater & Purifier Co. —

STITCHING MACHINERY.
Saranac Machine Co. 79

STOCK REGULATORS. Page
Trimbey Machine Co. 44

STRAW MAKING.
Samuel M. Langston Co. 78

SUCTION BOX COVERS.
Menasha Wood Split Pulley Co. 71

SULPHITE, BLEACHED AND UNBLEACHED.
J. Andersen & Co. 4 and 27
The Borregaard Co., Inc. 65
Brown Co. 5
Bulkley, Dunton & Co. 14
Butterworth & Co., Inc., E. 72
Canadian Robert Dollar Co. 4
Columbian Paper Co., Inc. 74
Craig-Becker Co., Inc. 3
Eastern Manufacturing Co. 70
Mead Sales Co., The 56
Price & Pierce, Ltd. Front Cover
Pulp & Paper Trading Co. 70

SULPHUR.
Texas Gulf Sulphur Co. 7
Union Sulphur Co. 76

TANKS (Water, Oil, etc.).
Biggs Boiler Works Co. —
W. E. Caldwell Co. —
New England Tank & Tower Co. 83
Stearns Lumber Co., A. T. —
Tokheim Oil Tank & Pump Co. —
Woolford Wood Tank Co. 76

TEMPERATURE RECORDING.
Bristol Co. —

TIMBER ESTIMATES.
The Bradley Sales Agency. 72
James W. Sewall. 72

TIME RECORDS.
Bristol Co. —

TRANSMISSION MACHINERY.
H. W. Caldwell Co. 3
Hill Clutch Co. —
Reeves Pulley Co. 71
Weller Mfg. Co. —

TURPENTINE.
Hercules Powder Co. —

TWINES.
American Manufacturing Co. 57

VALVES.
Crane Co. 73
Jenkins Bros. 4

VAPOR ABSORPTION SYSTEMS.
Ross Engineering Co. 33 and 72

VENTILATING FANS.
B. F. Perkins & Sons, Inc. 11
Ross Engineering Co. 33 and 72

VEGETABLE PARCHMENT PAPERS.
Kalamazoo Vegetable Parchment Co. 61

WAX PAPERS.
Lindsay Bros., Inc. 74

WOOD FLOUR.
Union Wood Flour Co. 78

WOOD PULP IMPORTERS.
American Wood Pulp Corp. 74
J. Andersen & Co. 4 and 27
Ira L. Beebe & Co. 83
The Borregaard Co., Inc. 65
Bulkley, Dunton & Co. 64
M. Gottesman & Co. —
Hammond, R. F. Front Cover
E. J. Keller Company 83
Lagerloef Trading Co. 12
Mead Sales Co., The 56
Nilsen, Lyon & Co., Inc. 35
A. J. Pagel & Co., Inc. 41
J. F. Patton & Co., Inc. 8
Perkins-Goodwin Co. 37
Scandinavian-American Trading Company, Front Cover

WOOD ROLLS.
Rodney Hunt Machine Co. 53

Fitchburg, Mass., U. S. A.

UNION SCREEN PLATE COMPANY

Lennoxville, P. Q. Canada

UNION BRONZE (Best phosphorized Cast Metal) **SCREEN PLATES** ROLLED BRASS (Union Quality)

Old Plates RECLOSED and RECUT to accurate gauge.

UNION BRONZE SCREWS for Screen Plates

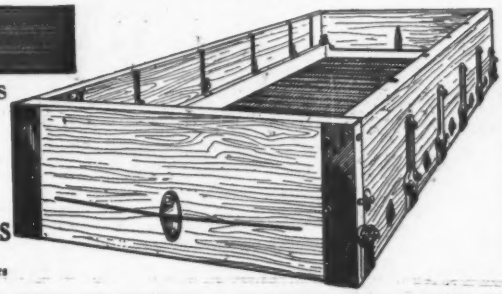
UNION BRONZE SUCTION BOX PLATES

Immediate Delivery of the Largest Orders. Satisfaction Guaranteed.

THE UNION WITHAM SCREEN PLATE VAT AND FASTENERS

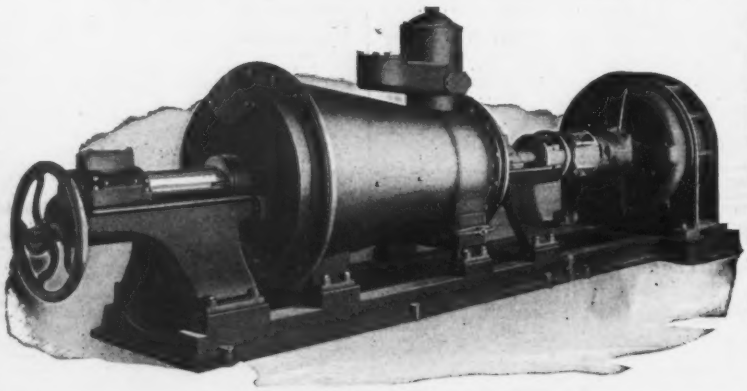
THE ORIGINAL
Over One Thousand in Successful Operation

THE BEST
Recommended by Screen Makers



XUM

THE DILLON JORDAN



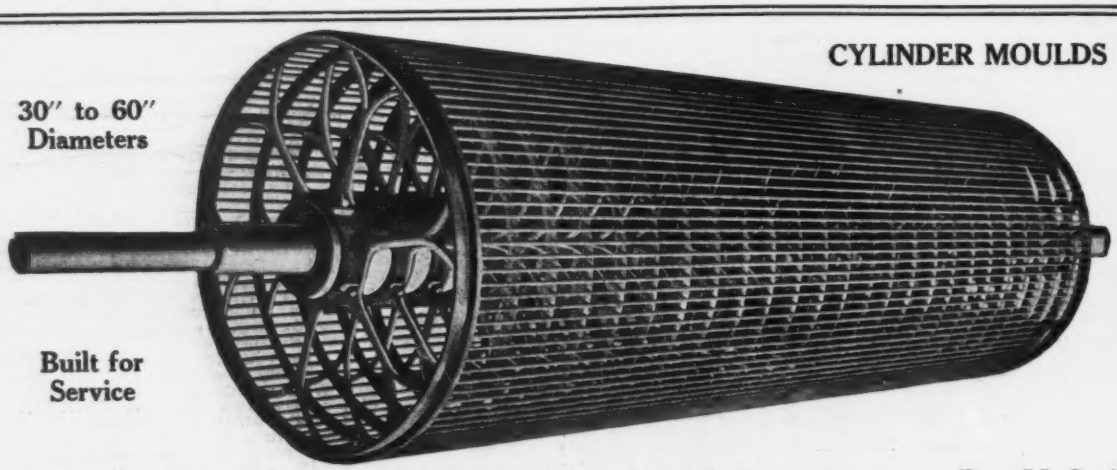
Our latest Improved Machine, three sizes; belt or direct connected motor driven. All Bearings self-oiling, adjustable and water-cooled. Fitted with Standard Steel Knives, Special Heat Treated Steel, Bronze, or Manganese Steel Plug and Shell Lining.

For full particulars apply to

DILLON MACHINE CO., Inc.
Builders of Paper Mill Machinery
Lawrence, Mass.

CYLINDER MOULDS

30″ to 60″ Diameters



Built for Service

DOWNINGTOWN MANUFACTURING CO., E. Downingtown, Pa., U. S. A.

ESTABLISHED 1842

FOURDRINIER WIRES

DANDY ROLLS
CYLINDER
MOLDS

CHENEY BIGELOW WIRE WORKS

SPRINGFIELD, MASS.

MANUFACTURERS

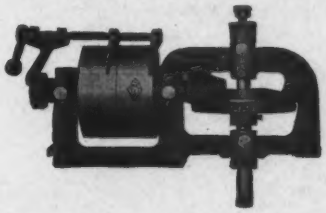
Paper Mill Wire Cloth, Bank and Office Railings and Grill Work

Dry Rosin Size

Brittle and easily soluble. Cheapest size out. Cheaper than mill made size. Also our hot and cold water sizes; standard quality. Cleaner, more uniform and economical than either mill made sizes or those offered by our competitors. Also Arabol Paper Size, Splicing Gums, Condensed Paste Powder, Paper Makers' Starches.

Arabol Manufacturing Co.
100 William Street NEW YORK

AGITATOR DRIVES



Six Stock Sizes
Special Designs
"NETT-CO" line
is complete from
smallest to largest.

NEW ENGLAND TANK & TOWER CO.
30 CHURCH ST., N. Y. EVERETT, MASS.

E. J. KELLER COMPANY
INCORPORATED
200 FIFTH AVENUE
NEW YORK

FOREIGN AND DOMESTIC
PAPER MAKERS' SUPPLIES
CHEMICAL AND MECHANICAL PULPS
COTTON, JUTE AND FLAX WASTES
EAST INDIA MERCHANDISE

Van Noorden Skylights

are as
Indispensable

To a modern Paper Mill as its important inner equipment. "DAYLITE" means Nature's light without weather or condensation drip.

E. VAN NOORDEN & CO. 103 Magazine St. Boston, Mass.

PULP STONES

of absolutely the finest quality

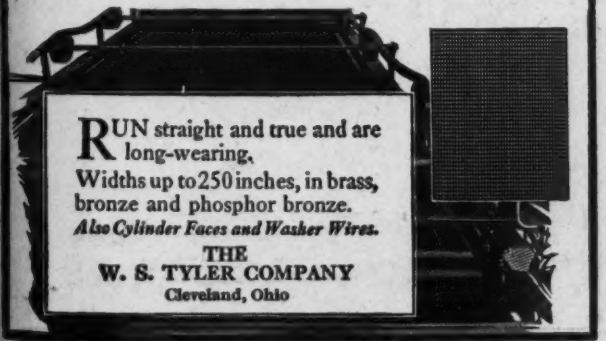
Lombard & Co., Incorporated
Importers and Dealers
236-238 A Street : BOSTON, MASS.
Branch at Montreal, Canada

ESTABLISHED 1851
IRA L. BEEBE CYRUS E. JONES

IRA L. BEEBE & CO.
132 Nassau St., New York

IMPORTERS AND DEALERS IN
WOOD PULP

"TYLER" FOURDRINIER WIRES



RUN straight and true and are long-wearing.
Widths up to 250 inches, in brass, bronze and phosphor bronze.
Also Cylinder Faces and Washer Wires.
THE
W. S. TYLER COMPANY
Cleveland, Ohio

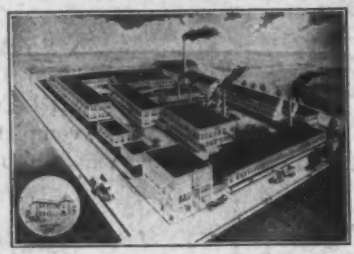
COLORS FOR PAPERMAKERS

KUTTROFF, PICKHARDT & CO.
INCORPORATED
128 Duane Street - - New York
BOSTON - 157 Federal St. PHILA. - 111 Arch St.
PROV. - 52 Exchange Pl. CHI. - 305 W. Randolph St.

XUM

EASTWOOD WIRE MFG. CO.

Fourdrinier Cylinder & Washer Wires in Brass and Bronze



Valves Cocks Fittings Unions and Castings in "Perfection" Bronze

Cylinder Moulds Blow Off Valves

BELLEVILLE, NEW JERSEY, U. S. A.

C. K. WILLIAMS & CO., EASTON PA.

Proprietors of the Penna. Dry Paint and Color Works and the Helios Dry Color, Chemical and Copperas Works of Allentown, Pa.

Manufacturers, Miners and Importers of Coloring Materials, such as Venetian Reds, Red, Brown, Black, Yellow, Oxides, Chome and other Ochres, also Paper Fillers—as Agalites, Mineral Pulp, Talc, China and other Clays.

COLORS FOR PAPER MANUFACTURERS' USE

THE WM. CABBLE EXCELSIOR WIRE MFG. CO.

Established 1848
Incorporated 1870-1896

Manufacturers of Superior Fourdrinier Wires
Brass, Copper and Iron Wire Cloth of Every Description.
Best Quality of Wire Rope.

Write for Price List

74-90 Ainslie St. BROOKLYN, N. Y.

Rags are the most expensive paper-making material. Lower your ultimate costs with America's best

"G.B." 3RDS & BLUES

Inquiries solicited

GUMBINSKY BROS. CO.

America's Largest Packers of Rags and Waste Paper

2261 South Union Ave., Chicago, Illinois 2

Don't Guess at Important Matters

BOWSHER'S SPEED or MOTION INDICATOR is indispensable

in obtaining a UNIFORM speed of machinery, and is one of the most PROFITABLE little devices ever put in a mill. Will pay for itself in 30 days. Dial 12 in. in diam. Weight, 10 lbs.

The N. P. Bowsher Co., South Bend, Ind.

NATRONA Porous Alum

MANUFACTURED BY

PENNSYLVANIA SALT MFG. COMPANY

PHILADELPHIA

Hamilton Board Felts

Our style No. 82 top felt and style No. 87 bottom felt have the bulk of the filling threads on the face of the fabric. This style of weave causes the felts to give a smoother finish and longer service than can be secured from plain weave board felts besides shedding the water better. They do not "roll on the edge" and are billed at the same list and pound prices as our plain board felts.

SHULER AND BENNINGHOFEN

HAMILTON, OHIO 4

FOURDRINIER CYLINDER WASHER

WIRES

50 years' experience as wire makers insures highest quality of product

"Appleton Wires Are Good Wires"

Appleton Wire Works Appleton, Wis.